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THESIS

ACQUISITION OF FOREIGN NDI WEAPON SYSTEMS FOR UNITED STATES SPECIAL OPERATIONS FORCES

by

Andrew R. Ramsey

June 1997

Principal Advisor: Walter E. Owen

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The purpose of this thesis is to explore and analyze the process required to procure foreign non-developmental item (NDI) weapon systems for Special Operations Forces (SOF). The primary intent is to provide the program manager and other acquisition professionals with information needed to identify the strengths, weaknesses, and validity of acquiring foreign NDI weapon systems. A case analysis, focusing on the acquisition of the Maritime Air Delivery System (MADS) for USSOCOM, is utilized to develop recommendations regarding the procurement of foreign NDI weapon systems for Special Operations Forces. Key issues regarding the MADS procurement are analyzed within the context of the impediments, challenges and advantages discussed in the thesis. It was determined that the MADS acquisition strategy, although not perfect, was sufficient to obtain and test a viable weapon system while mitigating the risks associated with cost, schedule and performance. Problems encountered during the process have been identified and organizational and administrative changes have been made to correct these deficiencies.

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ACQUISITION OF FOREIGN NDI WEAPON SYSTEMS FOR UNITED STATES SPECIAL OPERATIONS FORCES

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Submitted in partial fulfillment
of the requirements for the degree of

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ABSTRACT

The purpose of this thesis is to explore and analyze the process required to procure foreign non-developmental item (NDI) weapon systems for Special Operations Forces (SOF). The primary intent is to provide the program manager and other acquisition professionals with information needed to identify the strengths, weaknesses, and validity of acquiring foreign NDI weapon systems. A case analysis, focusing on the acquisition of the Maritime Air Delivery System (MADS) for USSOCOM, is utilized to develop recommendations regarding the procurement of foreign NDI weapon systems for Special Operations Forces. Key issues regarding the MADS procurement are analyzed within the context of the impediments, challenges and advantages discussed in the thesis. It was determined that the MADS acquisition strategy, although not perfect, was sufficient to obtain and test a viable weapon system while mitigating the risks associated with cost, schedule and performance. Problems encountered during the process have been identified and organizational and administrative changes have been made to correct these deficiencies.

TABLE OF CONTENTS

I. INTRODUCTION 1

A. PURPOSE 1

B. BACKGROUND 1

C. THESIS OBJECTIVE 2

D. RESEARCH QUESTIONS 3

E. SCOPE AND LIMITATIONS 3

F. RESEARCH LITERATURE AND METHODOLOGY 4

G. DEFINITIONS/TERMS 4

H. ORGANIZATION OF THESIS 5

II. FOUNDATION 7

A. INTRODUCTION 7

B. POLICIES AFFECTING THE ACQUISITION OF FOREIGN NDI, 1933-1985 7

1. Buy American Act 8

2. Effects of the Cold War and NATO Formation 8

3. Foreign Comparative Testing (FCT) 11

C. POLICIES AFFECTING THE ACQUISITION OF FOREIGN NDI, 1986-PRESENT 12

1. Legislation 12

2. Other Policy Directives 14

3. Regulations 15

D. USSOCOM SPECIFIC ACQUISITION ELEMENTS 16

1. Introduction 16

2. Acquisition Center 16

E. SUMMARY 21

III. IMPEDIMENTS AND CHALLENGES TO FOREIGN NDI PROCUREMENT 23

A. POLITICAL CONSIDERATIONS 23

1. Introduction 23

2. Congress 24

3. Foreign Influence 25

4. Executive Branch 26

5. Special Interests 27

6. Program Managers 27

B. DEPENDENCY PROBLEMS 28

C. CONTRACTING CONSIDERATIONS 30

1. FAR/DFAR 30

2. Payment Terms and Conditions 31

D. LOGISTICAL SUPPORT ISSUES 32
1. Shortened Acquisition Cycle 32
2. Technical Data Packages 33
3. Conclusion 34
E. CULTURE AND COMMUNICATIONS 34
1. Interpreters 35
2. Bribes 35
3. Knowledge 35
F. TEST AND EVALUATION 36
1. Risk 36
2. Impediments 37
G. REQUIREMENTS GENERATION 38
H. SUMMARY 39
IV. BENEFITS OF ACQUISITION OF FOREIGN NDI WEAPON SYSTEMS 41
A. COST REDUCTION 41
1. Reduced R&D Costs 41
2. Firm Fixed Price Contracts 41
B. SCHEDULE 42
C. PERFORMANCE 43

D. TEST AND EVALUATION 43

E. FCT ADVANTAGES 45

1. Program Advantages 45

2. FCT Nomination Process 45

3. FCT Participation 46

F. SUMMARY 46

V. MADS ACQUISITION CASE ANALYSIS 49

A. INTRODUCTION 49

B. DESCRIPTION OF THE MADS 49

1. User Requirements 49

2. System Description 50

3. Current Status 50

C. KEY ISSUES 51

D. ANALYSIS OF KEY ISSUES 52

1. Formal Acquisition Process 52

2. Program Management 55

3. User Requirements 58

4. Test and Evaluation Issues 62

5. Effect of MADS on the Procurement of the 10 Meter RHIB 67

6. Political 68

7. Establishment of USSOCOM FCT Office 70

VI. CONCLUSIONS 73

A. SUMMARY 73

B. CONCLUSIONS 73

C. RECOMMENDATIONS 74

D. RECOMMENDATIONS FOR FURTHER RESEARCH 75

1. Risk Management 75

2. Cost Benefit 75

3. World-Wide Acceptance 75

LIST OF REFERENCES 77

APPENDIX. ACRONYMS 83

INITIAL DISTRIBUTION LIST 87

I. INTRODUCTION

A. PURPOSE

The purpose of this thesis is to explore and analyze the process required to procure foreign non-developmental item (NDI) weapon systems for Special Operations Forces (SOF). This thesis will provide the program manager and other acquisition professionals with information needed to identify the strengths, weaknesses, and validity of acquiring foreign NDI weapon systems. A case analysis, focusing on the acquisition of the Maritime Air Delivery System (MADS), will be utilized to develop recommendations regarding the procurement of foreign NDI for Special Operations Forces.

B. BACKGROUND

Our National Security Strategy has changed dramatically in the last decade. No longer do we face a definable, significant threat. The shift in focus from the Cold War and an overall decrease in the size of the defense budget has forced the Department of Defense (DoD) to reevaluate the way in which it does business. Unfortunately, the number of operational commitments (Haiti, Somalia, Bosnia, etc.) has increased while funding levels have decreased. To counter this imbalance, many services have been forced to cut costs by decreasing funding levels in the procurement arena. The DoD is now exploring various acquisition strategies to combat the shortfalls brought on by the decrease in procurement funding. One strategy that the DoD is exploring is the increase in the acquisition of foreign NDI weapon systems.

The Special Operations Forces (SOF) budget is only about 1 percent of the defense budget and has historically not suffered the funding decrements that have characterized the rest of the forces. "However, that immunity from reduction has

ended. For the 1995-1999 period, SOF RDA (Research, Development and Acquisition) was reduced $1.3 billion, or 33% from the previous planned levels." (Matthews, 1995, p. 3) Because of these reductions, a major reevaluation of the entire U.S. Special Operations Command (USSOCOM) modernization program has resulted. (Matthews, 1995, p. 4) The acquisition of foreign NDI weapon systems may solve some of the problems brought on by the decrease in funding and increase in operational pace (OPPACE).

C. THESIS OBJECTIVE

A major objective of acquiring any weapon system for DoD is to get the most "bang for the buck." Procuring NDI weapon systems from foreign sources is just one way in which USSOCOM is attempting to outfit its units while combating the procurement shortfalls brought on by the decrease in funding levels. "A glimpse into the SOF program shows a change in the RDA share decreased from 40% of MFP (Major Force Program) 11 in Fiscal Year 1992, to 23% in Fiscal Year 2001." (Matthews, 1995, p. 4)

The primary objective of this thesis is to explore and analyze the acquisition process required to procure foreign NDI weapon systems for SOCOM. This will assist program managers in identifying the strengths, weaknesses, and validity of procuring foreign NDI weapon systems. The analysis of the Maritime Air Delivery System (MADS) identifies some of the impediments, challenges and benefits to procurement as an ongoing SOCOM foreign NDI acquisition. Conclusions and recommendations based on the analysis of the case are presented. Areas for further research are identified.

D. RESEARCH QUESTIONS

The primary research question for this thesis is:

1. How does the Department of Defense acquire foreign non-developmental item (NDI) weapon systems for Special Operations Forces?
2. Secondary Research Questions:

    a. What are the current Governmental acquisition policies and initiatives affecting the acquisition of foreign NDI weapon systems?

    b. What are the impediments and challenges to the acquisition of foreign NDI weapon systems?

    c. What are the benefits of acquiring foreign NDI weapons systems for Special Operations Forces?

    d. What role does the Foreign Comparative Testing (FCT) Program play and has it been successful in this role in the past?

    e. What impediments and challenges have occurred in the acquisition of the MADS? Are they different from those discussed earlier? Are they specific to this acquisition? How can they be eliminated or minimized?

    f. Have the benefits discussed in the thesis actually occurred? If not, why? Was the FCT Program utilized for this acquisition, and if so, what were the benefits and challenges?

    g. What are NDI acquisition lessons learned for USSOCOM?

E. SCOPE AND LIMITATIONS

The thrust of this thesis is to explore and analyze the acquisition process required to procure foreign NDI (Special Operations-Peculiar) weapon systems for Special Operations Forces. The first step will be to develop a common foundation of knowledge by briefly examining the history of both U.S. foreign weapons procure-

ment and NDI procurement, examining the current policies and directives which affect the acquisition of foreign weapon systems for SOF, and examining USSOCOM specific acquisition elements (e.g., requirements process, acquisition authority, special operations peculiar items, etc.). The second step will be to examine the impediments, challenges and benefits of acquiring foreign NDI weapon systems for SOF. The third step will be to conduct a case analysis of the Maritime Air Delivery System (MADS).

> The MADS provides the means to tactically insert a rigid hull inflatable boat (RIB) into oceans or lakes from a C-130 aircraft without requiring the aircraft to land. Its British manufacturer, Aircraft Materials Limited (AML), calls the airdrop device the Platform Universal Rigid Inflatable Boat Aerial Delivery (PURIBAD) system. The parachute-based system can accommodate any RIB in the range of 22 to 28 feet in length, with outboard or inboard engines. (Goodman, 1996, p. 50)

F. RESEARCH LITERATURE AND METHODOLOGY

Literature reviews were conducted and research data was obtained from official government directives and policies, journals, previous Naval Postgraduate School theses, Department of Defense and Army regulations and personal interviews. Personal interviews were used to provide insight into the current processes and the future direction of foreign NDI acquisition in Special Operations. Interviews focused on current acquisition processes regarding foreign NDI weapon system acquisition and on specific issues concerning the acquisition of the Maritime Air Delivery System (MADS). A site visit to SOCOM was conducted to collect data and information for the case analysis.

G. DEFINITIONS/TERMS

Non-Developmental Item - Is a statutory term describing items that have been previously developed for production. Non-developmental items include:

1. Any previously developed item in use by a federal, state, or local agency of the U.S. or a foreign government with which the U.S. has a mutual defense cooperation agreement;

2. Any item described above that requires only minor modification to meet the requirements of the procuring agency; or

3. Any item currently being produced that does not meet the requirements listed above solely because the item is not yet in use. (Buying Commercial and NDI: A Handbook, 1996, p. 7)

Special Operations-Peculiar -

Any item or service that is peculiar to SOF. This includes standard items used by other DoD forces, but modified for SOF; items initially designed for, or used by SOF, until adopted for use as Service common by other DoD forces; and items approved for use by CINC/DCINC as critically urgent for the immediate accomplishment of a SOF mission. (Ryan, 1996, p. 30)

Foreign Comparative Testing (FCT) - "A project that tests and evaluates a foreign technique, process, or other subset of a system architecture with the intent of applying that technology to an identified conventional U.S. military system." (DSMC, Glossary, 1995)

H. ORGANIZATION OF THESIS

Chapter I contains the purpose, background, thesis objectives, primary and secondary research questions as well as the research scope and methodology.

Chapter II of this thesis develops a common foundation of knowledge of the acquisition of foreign NDI weapon systems. It examines the history of both U.S. foreign weapons procurement and NDI procurement. It also examines current DoD policies and directives which affect the acquisition of foreign weapon systems for SOF. Finally, it examines USSOCOM specific acquisition elements.

Chapter III explores the different impediments and challenges to the acquisition of foreign NDI weapon systems. These include contracting problems, political implications, logistical challenges, culture and communication problems, test and evaluation challenges and user requirement issues.

Chapter IV explores the benefits of acquiring foreign NDI weapon systems. These include decreased time to acquire, cost reduction, risk reduction, test and evaluation advantages, and the role of the FCT program.

Chapter V contains the analysis of the MADS program. It explores the history of the program, and how it is affected by the stated benefits and challenges. It also highlights those areas or factors not previously explored which have an impact on the program.

Chapter VI contains a summary of the previous chapters, with an emphasis on results from the case analysis, and suggests areas for further research.

II. FOUNDATION

A. INTRODUCTION

Several factors can affect the procurement of a foreign non developmental item (NDI) for the DoD/USSOCOM. First, any policy, regulation or statute affecting the broader area of NDI will, in turn, affect the procurement of foreign NDI. Second, any policy or regulation that affects foreign procurement/contracting can also affect the procurement of foreign NDI. And lastly, any policy or regulation that directly pinpoints foreign NDI affects the procurement of the same. The remainder of this thesis is predicated on this premise.

The purpose of this chapter is to develop a common foundation of knowledge of the acquisition of foreign NDI weapon systems. This is accomplished by first examining the history of U.S. foreign weapon systems procurement. This historical perspective will provide insight into the policies and statutes enacted by the Government. Next, the current DoD policies and directives which affect the acquisition of all NDI weapon systems will be examined to see how they might affect the procurement of foreign NDI. Although most of these policies and directives do not directly target foreign NDI, all impact on its procurement. Finally, USSOCOM's organization and specific acquisition elements will be examined to gain a better understanding of this unique organization. This sets the stage for the analysis of the Maritime Air Delivery System (MADS) which is currently being procured by USSOCOM.

B. POLICIES AFFECTING THE ACQUISITION OF FOREIGN NDI, 1933-1985

There have been restrictions to foreign procurement since the creation of this country and attempts to open up the foreign marketplace still meet with resistance

from Government agencies, the defense industry, and other special interest groups. In fact, of all the major western armament producing countries, the U.S. easily has the most restrictions and barriers to free and open trade. (Hood, 1996) Accordingly, the Department of Defense (DoD) has favored purchasing domestic products. The following section focuses on how foreign procurement has been impacted by the Buy American Act (BAA), the Cold War and membership in the North Atlantic Treaty Organization (NATO).

1. Buy American Act

The cornerstone of the United States international procurement policy is the Buy American Act (BAA) of 1933. This landmark legislation gives preference to domestic producers in competition for Government contracts. It requires that those goods purchased for the use of our armed forces come from U.S. sources. Enacted during the Great Depression, it received broad acceptance from business groups and consumers. (Berquist, 1979) "Although its effect has been modified by more recent actions and agreements, it continues to influence government purchasing decisions and is often the basis for controversy and litigation over purchase actions." (Sherman, 1991, p. 331)

2. Effects of the Cold War and NATO Formation

Before the passage of the BAA, the War Department procurement agencies were allowed to acquire equipment and weapons from any low bid source, regardless of where the item was produced. At that time, the only existing policy addressing domestic preference was an amendment to the 1875 Army Appropriation Bill. This amendment required Government buyers to procure items from domestic sources if the price and quality of the competing foreign products were equal. (Meister, 1995, p. 1)

At the time the BAA was passed, "the results of an as-fought World War and the exigencies of the ensuing 'Cold War' could not be anticipated." (Burt, 1979, p. 5) After World War II ended, the presence of a militarily superior Soviet Army in Eastern Europe and the subsequent threat posed by the resulting power vacuum in Western Europe forced a change in how the U.S. would shape its defense acquisition policies. The North Atlantic Treaty, signed on 4 April 1949, was the vehicle for that change. (Burt, 1979, p. 5)

The original twelve members of the North Atlantic Treaty Organization (NATO) signed the treaty in order to "...promote stability and well-being in the North Atlantic area" and to "unite their efforts for collective defense and for the preservation of peace and security." (Burt, 1979, p. 5) The part of the treaty that has relevance for foreign procurement is Article 3 which states: "...the parties (NATO member countries), separately and *jointly*, by means of continuous and effective self help and mutual aid, will maintain and develop their individual and *collective capacity* to resist armed attack." (Burt, 1979, p. 5) Also pertinent is the Temporary Council Committee's determination in 1952 that the interest of NATO necessitated "correlating production programs of major end items of equipment, including aircraft, artillery, small arms, radar and wireless sets, vehicles, ships and various types of ammunition." (Burt, 1979, p. 6)

These statements seen to dictate that a cooperative effort for self-defense and arms production would be initiated by member countries. However, the strength of the NATO members themselves undermined the need for the *collective capacity* called for in the 1949 treaty. The technological and economic advantages of the West over the Soviet Union made it feasible for each country to act independently of the overall goal of NATO. This strength permitted each independent nation to place its

own economic interests above the interests of a strong and effective alliance. (Burt, 1979, p. 6)

Initially, the U.S. supplied the majority of weaponry to NATO due to the extremely poor state of the European arms industry. However, once member countries developed their own defense industries, they satisfied their own needs and looked towards exportation. These changes fueled the problems of standardization and interoperability already experienced within NATO. For example, "...There are deployed among the NATO military forces today at least 7 basic models of tanks; 23 types of combat aircraft;...multiple guns of different caliber.... Some guns of the same caliber cannot fire the same ammunition; aircraft with diverse ordinance and fuel requirements can only rearm or refuel at certain airfields." (Burt, 1979, p. 8) Since NATO defense plans call for mutual support and integration, these impediments were a major cause for concern to its leaders.

In addition to these impediments, NATO had to worry about the growing military might of the Soviet Union. In the 1950's and 60's, the Soviet Union focused on building its military power. It increased its defense expenditures at a compound rate of three to four percent per year for approximately two decades and overcame a 10-1 inferiority in the central strategic balance. This build-up by the Soviet Union forced NATO to reexamine how it maintained and developed *collective capacity* to resist armed attack. NATO could not operate as it did in the past and still maintain parity with the Soviet Union. (Burt, 1979, pp. 8-9)

To counter these problems, the U.S. and its NATO allies embarked on a policy of Rationalization/Standardization and Interoperability (RSI) during the 1970's. "These three terms are used to describe an objective which is expected, once realized, to result in a significant increase in the ability of NATO to efficiently defend itself. (Burt, 1979, p. 2) U.S. Public Law 94-361, passed on July 14, 1976, requires that

equipment for use by personnel of the Armed Forces of the United States stationed in Europe under terms of the North Atlantic Treaty should be standardized or at least interoperable with equipment of other members of the North Atlantic Treaty Organization. (FCT Procedures Manual, 1994, p. i) The Culver-Nunn Amendment of 1977 requires that "The Secretary of Defense shall, to the maximum feasible extent initiate and carry out procurement procedures that provide for the acquisition of equipment which is standardized or interoperable." (Burt, 1979, p. 8) This legislation permits the Secretary of Defense to waive the BAA when he deems it in the best interest of the national defense. It also states that the DoD must consider acquisition of foreign defense articles for use by U.S. Armed Forces, particularly those units operating with the NATO defense forces. (Burt, 1979, p. 9)

3. Foreign Comparative Testing (FCT)

One way in which the DoD is capitalizing on foreign investments is through the use of the Foreign Comparative Testing (FCT) Program. The FCT Program was authorized in 1989 and consolidates two earlier OSD managed programs, the Foreign Weapons Evaluation Program, and the NATO Comparative Test Program, dating form 1980 and 1986, respectively. (FCT Procedures Manual, 1994, p. 2) The use of foreign weapon systems allows the U.S. to preserve its own research and development dollars while capitalizing on notable improvements or advancements made by other member countries in new weapon systems development. The FCT Program also supports the U.S. policy of international armaments cooperation, reducing the overall DoD acquisition costs by facilitating the procurement of NDI while simultaneously strengthening U.S. relationships in the international community. (FCT Program, 1996, p. 1) Although a small program in dollars (over 300 FCT projects have been completed since 1980, resulting in over 60 U.S. procurements worth over 3 billion dollars), it had the support of the former Defense Acquisition Executive, the

Honorable Paul G. Kaminski, who mandated that when a "reasonable expectation of funding for production exists, FCT projects should be undertaken..." (FCT Homepage, 1996, p. 2)

C. POLICIES AFFECTING THE ACQUISITION OF FOREIGN NDI, 1986-PRESENT

The Commission on Government Procurement first called for the use of NDI by the DoD in December 1972. Since that time, there have been numerous commissions, reports, studies, task forces and Process Action Teams (PAT) addressing the acquisition of NDI. (Trulock, 1995, p. 1) Now, 25 years later, the DoD is finally implementing and integrating the concept of NDI into the acquisition process. The following legislative acts, regulations and other policy directives impact the acquisition of foreign NDI.

1. Legislation

Congress passed legislation in 1986 requiring the Department of Defense to give preference to the acquisition of non-developmental items. The passage of this legislation was in response to the increasing cost of developing systems, the technical risk associated with new development, and the increasing time to field systems. With the use of NDI however, fielding time is shortened, research and development costs are decreased, and the associated risks are decreased. "Based on these incentives ...Congress broadened the preference for the acquisition of commercial items to preference for the acquisition of nondevelopmental items, coining the term." (Buying Commercial & NDI, 1996, p. 2)

In the FY 1991 National Defense Authorization Act, Congress designated the Section 800 Panel to review all the laws affecting DoD procurement "with a view toward streamlining the defense acquisition process." Chapter 8 of the panel's report dealt with the far-reaching reforms needed to enhance the acquisition of commercial

items, both as components to DoD systems and as end items. The results and recommendations from this review were later incorporated in the Federal Acquisition Streamlining Act of 1994. (DSMC, 1993, p. 7)

President Clinton signed into law the Federal Acquisition Streamlining Act (FASA)of 1994 on October 13, 1994. This act implements many of the Section 800 Panel's recommendations regarding the overhaul of the laws governing the DoD acquisition process. It repeals or modifies more than 225 provisions of law that affect the acquisition system, consistent with the recommendations of the Section 800 Panel and the National Performance Review. (OAGC, 1994, p. 1) "However, FASA establishes only a framework for simplifying or 'streamlining' the current federal acquisition process. Most of FASA's sweeping changes will not impact the contracting process until the act is implemented by extensive regulatory changes in the FAR." (Acquisition Web, 1996)

Of all the changes made by FASA-94, the new rules for the acquisition of non-developmental items are the most extensive and will have the greatest impact on the procurement business. These rules will affect most contracting professionals, not just those who bought commercial items in the past. (Gaudio, 1995, p. 11) These changes cover the following:

1. It allows contractors of commercial items to use their existing quality assurance systems; prohibits the use of cost type contracts in the acquisition of commercial items;

2. States that firm fixed price with economic price adjustment type contracts should be used;

3. Requires agencies to conduct market research before soliciting bids and establishes a clear preference for non-developmental items. (NCMA, 1994, p. 100)

The most recent legislation to try and limit the impediments to free trade in the acquisition of defense systems is the McCain Amendment. Sponsored by Senator John McCain (R-Arizona), a key member of the Senate Armed Forces Committee, this interim rule allows the Administration to waive provisions in current and proposed legislation that stipulate that only U.S. components can be used in American weaponry. However, appropriation restrictions override some of the flexibility of the McCain Amendment. This is true for ball and roller bearings and for anchor and mooring chains. (Hildens, 1997)

2. Other Policy Directives

President Clinton convened the National Performance Review (NPR) study in March 1993 in an effort to create a more cost efficient Government. The study's final report, "From Red Tape to Results: Creating a Government That Works Better and Costs Less," recommended the following concerning NDI acquisition: "Foster reliance on the commercial market. Change laws to make it easier to buy commercial items. For example, revise the definition of commercial items. Revise Government wide and agency regulations and procedures which preclude the use of commercial specifications." (GAO, 1994, p. 456)

In June 1994, Secretary of Defense William J. Perry signed a memorandum entitled "Specifications and Standards - A New Way of Doing Business" that dramatically changes the way the Government will conduct procurement in the future. The DoD is now directed to "use performance and commercial specifications and standards in lieu of military specifications and standards, unless no practical alternative exists to meet the user's needs." (Perry, 1994, p. 1) This major shift or reversal in policy makes it easier for the DoD to procure NDI.

Secretary of Defense William Cohen strengthened DoD's policy regarding allied cooperation on defense acquisition programs by supporting the International

Armaments Cooperative Policy, which took effect on March 23, 1997. The objective of this policy is to achieve the "deployments and support of standardized equipment with potential coalition partners and maximize U.S. funds by sharing costs and achieving economies of scale through cooperative research, development, production and logistical support." (Inside the Air Force, 1997, p. 3) Cohen stated that the U.S. has been very successful in international cooperation at the technology end of the spectrum, but that we needed to "extend this track record of success across the remainder of the spectrum to include major defense systems." (Inside the Air Force, 1997, p. 3)

3. Regulations

DoD Directive's (DODD) 5000.1 and 5000.2R and the FAR implement the recent legislative and policy changes mentioned above. In regards to NDI, DODD 5000.1 and 5000.2R require that NDI market research and analysis be conducted prior to the commencement of any developmental effort, during the developmental effort and prior to the preparation of any product description. (Trulock, 1995, p. 5)

Mr. Gaudio, the leader of the FASA Commercial Item Drafting Team, and Colonel Trowel, a member of the same team, state that the FAR, parts 10, 11, and 12, have been completely revised to emphasize the following regarding NDI:

> Every acquisition should begin with a series of steps to address important questions such as: what general capabilities are available in the marketplace to satisfy my requirement? Can a non-developmental item satisfy my requirement? How can I describe my requirement to maximize both competition and the acquisition of commercial items? (Gaudio, 1995, p. 12)

This section addressed several key areas that affect the acquisition of foreign NDI weapon systems. In the next section, the U.S. Special Operations Command

(USSOCOM) organization and functions will be explored to examine how the acquisition process is accomplished.

D. USSOCOM SPECIFIC ACQUISITION ELEMENTS

1. Introduction

The Nunn-Cohen Amendment to the 1987 Defense Authorization Act gives SOF its own distinct budget authorities, and created both the USSOCOM and the Assistant Secretary of Defense for Special Operations and Low-Intensity Conflict (SO/LIC). (Armed Forces Journal International, 1997, p. 47)

The United States Special Operations Command (USSOCOM) is one of nine unified commands in the U.S. military's combatant command structure and is composed of Army, Navy, and Air Force special operations forces (SOF). Its mission is to support the geographic commanders-in-chief (CINCs), ambassadors and their country teams, and other government agencies. "USSOCOM prepares SOF to successfully conduct special operations, including civil affairs and psychological operations, spanning the entire continuum of operations." (USSOCOM, 1996, p. 1)

USSOCOM tasks are unique among the CINCs. USSOCOM develops the doctrine, tactics, techniques and procedures for SOF forces, develops specialized courses of instruction, and trains assigned forces and ensures interoperability. It also has its own program and budget--Major Force Program (MFP)11--in the FYDP, and its own research, development, and acquisition organization. (Ryan, 1996)

2. Acquisition Center

Title 10, United States Code, SEC 167 provides the CINC, currently General Henry H. Shelton, USA, the "authority to acquire special-operations peculiar (SO-peculiar) equipment, material, services and supplies. The CINC delegates to the Special Operations Acquisition Executive (SOAE) this authority as the full time USSOCOM Acquisition Executive." (USSOCOM Directive 70-3, 1993, p. 2) The

SOAE has the clear authority, responsibility, and accountability established by USD (A&T) and is the Senior Procurement Executive (SPE) responsible for overseeing all special operations procurement activities. He reviews and assesses changes to acquisition programs submitted by program managers, serves as senior procurement executive, and also serves as principle advisor to the CINC on all matters relating to acquisition.

USSOCOM emphasizes the following streamlining initiatives to decrease procurement time and increase the quality of the equipment it receives: *maximize NDI procurement*; condense and/or combine the milestone reviews for minor programs; limit bureaucracy; make SOCOM the procurement agent; emphasize the rapid prototyping of weapon systems (demo to production); and increase the use of commercial standards. (Ryan, 1996)

The following is a brief description of the organization of USSOCOM'S acquisition arm. (See Figure 1)

- The "Special Operations Research, Development, and Acquisition Center (SORDAC) is a multi-disciplinary research, development and acquisition management support organization providing functional expertise to the Special Operations Acquisition Executive (SOAE), Program Executive Officers (PEOs), Program Managers (PMs), and System Acquisition Managers (SAMs) for USSOCOM MFP-programs." (USSOCOM Directive 70-1, Section III)

- The PEOs are assigned by the SOAE as the centralized managers of research, development, acquisition, testing, and fielding of assigned SO-peculiar programs.

- The Directorate of Procurement "provides contracting support to the SOAE for acquisition and executive support to the Special Procurement Executive (SPE). It also provides procurement support for SO-peculiar equipment, supplies, and services as regulated by the FAR and DFAR" (USSOCOM Directive 70-1, Section III, i (2)).

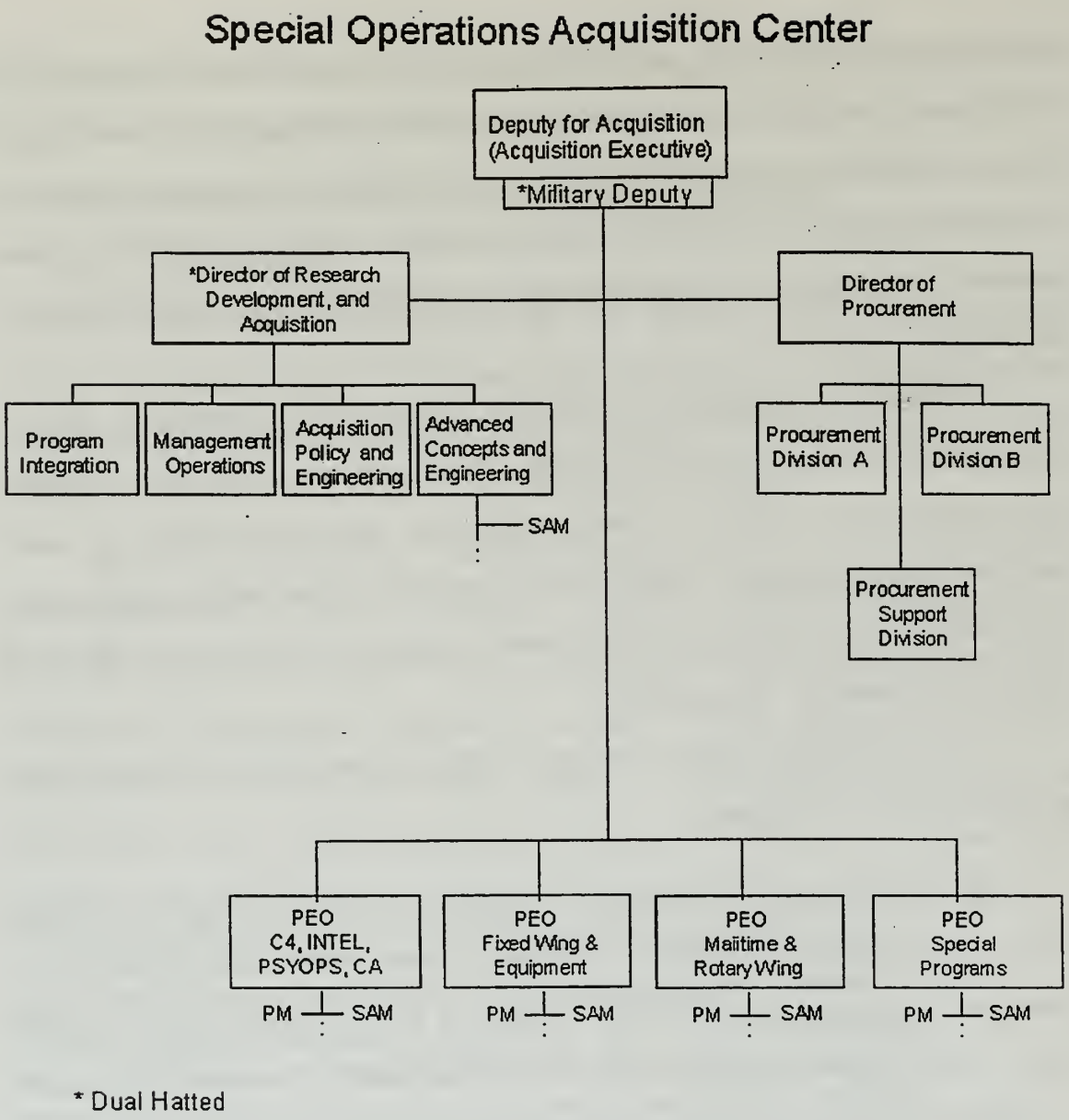

Figure 1. Special Operations Acquisition Center

The Operational Test and Evaluation (OT&E) Division for USSOCOM is one of six divisions comprising the J3 (Directorate of Operations) and was created in 1993 to allow for independent, objective oversight of OT&E on SOF systems. Its mission is to "ensure that adequate and realistic operational testing is conducted for new or modified SOF systems and provides release for SOF use in support of production decisions." (Ryan, 1996) It is a key player in the establishment of the USSOCOM acquisition policy, test strategies and operational requirements. This division specifically oversees OT&E on all SOF systems, develops Memorandum of Agreements (MOAs) with test agencies, selects operational test agencies and approves test strategies, and observes the critical operational test activities. (Ryan, 1996) OT&E also works closely with SORDAC for combined Development Test/ Operational Test (DT/OT), Live Fire Test and Evaluation (LFT&E), Joint Test and Evaluation (JT&E), and Foreign Comparative Testing (FCT).

USSOCOM also has its own Foreign Comparative Testing program office. Every year, the service's special operations components identify foreign systems or items that might satisfy a validated SOF requirement. These sponsors submit formatted nominations to the USSOCOM FCT office for formal submission to OSD to compete for limited funds. Each nomination is evaluated against established criteria (item must be in use or about to be in use, must be "NDI," etc.). The USSOCOM FCT office then establishes the Memorandum of Agreement (MOA) with the service PMs for execution of approved and funded FCTs.

FCTs are planned and executed in coordination with the USSOCOM OT&E office to address operational effectiveness and suitability requirements. The use of the FCT program saves development costs, thereby reducing the overall cost of the program. The following are three programs currently being evaluated by the FCT

office: Insensitive rocket motor for M72 LAW; Insensitive Munitions for the 84mm Recoilless Rifle; and the Maritime Air Delivery System (MADS). (Ryan, 1996)

The management of special operations-peculiar programs is accomplished by the USSOCOM acquisition team under the direction of the SOAE. They identify feasible alternatives and evaluate them according to cost, schedule, performance, and supportability. The procedures and methods utilized in the formulation and execution of an acquisition may differ significantly. The methods and procedures used depends on the complexity of the requirement, the type of acquisition, and the procedures used by the Service or agency selected for program management. USSOCOM may require the full range of acquisition programs (ACAT I, II, and III), but the majority of its programs are ACAT III. USSOCOM's acquisition and technology development programs consist of the following: (USSOCOM Directive 70-1, Section IV, 12a., 1993)

1. **Service - Or Agency Managed Programs.** "In most cases a Service shall develop and acquire an ACAT I system for USSOCOM because of the significant resources required." (USSOCOM Directive 70-1, Section IV, 12c. (1), 1993) It will be funded by USSOCOM using MFP-11 funds. The USCINCSOC is the Milestone Decision Authority (MDA) for ACAT IC programs (he may delegate authority to the SOAE) and the SOAE is the MDA for ACAT II and III programs (unless delegated to a PEO). Tactical Exploitation of National Capabilities (TENCAP) and technology development programs may also be executed by a Service on behalf of USSOCOM. A Memorandum of Agreement (MOA) specific to the program defines the roles and responsibilities of the SOAE, PEO, and PM, along with the MDA and the ACAT for these programs. (USSOCOM Directive 70-1, Section IV, 12c. (1), 1993)

2. **USSOCOM-Managed Programs.** Special Operations-peculiar acquisition technology and TENCAP programs are managed by the SOAE. "The technology development and TENCAP programs are established at USSOCOM to allow research and prototyping of promising technologies with the potential to satisfy SO-peculiar requirements." (USSOCOM Directive 70-1, Section IV, 12c. (2), 1993) The acquisition team from the SORDAC, which includes the various PEO's and PM's, will develop and acquire these programs. (USSOCOM Directive 70-1, Section IV, 12c. (2), 1993)

E. SUMMARY

This chapter developed a common foundation of knowledge in which to better understand the remainder of this thesis. This knowledge will offer insight to the impediments, challenges and advantages of procuring foreign NDI which will be examined in the next two chapters. The overview of USSOCOM's mission and acquisition organization provides a solid background to understanding some of the unique aspects of the case analysis of the MADS.

III. IMPEDIMENTS AND CHALLENGES TO FOREIGN NDI PROCUREMENT

With an NDI procurement, the user normally gets the item quicker and cheaper. However, there are many challenges, impediments and risks that must be identified and managed to ensure that the benefits of NDI are obtained. This chapter concentrates on these challenges and impediments by examining the political implications, dependency problems, contracting-related impediments, logistical support issues, culture and communication issues, test and evaluation issues, and user requirement issues that affect foreign NDI acquisition.

A. POLITICAL CONSIDERATIONS

1. Introduction

The problem that the U.S. faces when dealing with procurement objectives, along with every other nation, is how to protect national security, create and protect domestic jobs and industries, and maintain international trade. These competing interests make it difficult for the various agencies and institutions to formulate and execute a procurement policy that is in the best interest of the U.S. Government and the DoD.

Current DoD policy encourages competition of defense contracts, to include foreign competition. The Office of Foreign Contracting believes it is in the best interest of the U.S. to have maximum access to foreign products. US industry, for the most part, also has the same objective, because they believe the competitiveness of prime contractors depends upon proposals offering the best product at the best price. However, some industry sectors, usually the producers of components sold at the subcontract level, feel threatened by foreign competition. Special interest groups emerge to reflect these concerns. The affected firms, their employees, and the unions

representing them rely upon their representatives in Congress to pass legislation restricting DoD procurement of foreign systems. (Henderson, 1997)

2. Congress

Congress is the major force behind impediments toward free trade. Remember, "to reach maximum efficiency in carrying out personal objectives, representing constituent needs, and discharging legislative responsibilities, a Member (of Congress) must remain in Congress. Therefore, it stands to reason that reelection is the prime motivator." (Jones, 1996, p. x) The pressure to be reelected sometimes motivates Congressmen to implement policies favoring purchase of domestic products from domestic sources which may not be in the best interest of the DoD in terms of competition and availability.

The following list is an example of laws or programs implemented to protect domestic sources.

- The Balance of Payments Program (BOP), which restricts the purchase of foreign end products by the Department of Defense for use outside the U.S. ($25,000 threshold);
- The Berry Amendment, which restricts the DoD from purchasing foreign food, clothing, textiles, and specialty metal ($10,000 threshold);
- The Preference for Domestic Hand Tools, which restricts DoD from purchasing foreign hand tools. (Sherman, 1995, p. 234)

In addition to these laws are other protectionist measures which get tagged onto appropriation bills. These measures, like the aforementioned laws, also decrease the amount of competition, if only temporarily. When the funding for these appropriations runs out, so does the protectionist measure. However, the measure may have been in effect long enough to protect a domestic source from foreign competition during a major program source selection process.

These measures affect a large segment of products and illustrate how special interest groups have been able to protect their specific area from foreign competition. For example, supercomputers, aircraft fuel cells, totally enclosed lifeboat survival systems and four ton dolly jacks are all protected under various protectionist measures.

3. Foreign Influence

Foreign lobbies are pressuring Congress to counter isolationist policies. For example, British Defense Minister Michael Portillo "called on the US to consider a range of British weapons--including the Advanced Short-Range Air-to-Air Missile, ...to meet standing American Military requirements." (Muradin, 1996) He also pushed for the passage of the McCain Amendment and gained the support of Secretary of Defense Bill Perry on this issue. In support of this (and prior to the FY 97 Defense Authorization Bill), Secretary Perry sent a letter to Senator Strom Thurmond (Chairman, Committee on Armed Services), eliciting support for various programs, to include the McCain Amendment. (Henderson, 1997)

The results of domestic pressures also affect foreign policy and trade. "These pressures increase similar pressures in Europe, with the end effect being closed markets on both sides of the Atlantic, which benefits neither side" (Muradin, 1996). Recently, Britain has been criticized by its European neighbors for rejecting European made systems in favor of more than $5 billion in American systems. These systems include the Tomahawk cruise missiles, Advanced Medium-Range Air-to-Air Missiles, the C-130J Hercules transports, and the WAH-64 Westland Apache attack helicopters. (Muradin, 1996, p. 30) James Arbuthnot, Britian's procurement minister, countered this criticism by stating that "international procurement must be conducted only on a best value basis" and that they bought US products because they "offered a combination of superior quality and affordable cost." He further went on to add that...

"we do not buy British, we buy the best and that includes inviting a large number of countries to tender offers. I think it is wrong to go (exclusively) with Europe, I think it is shortsighted, I think it reduces competition, I think it reduces quality and value for money." (Muradin, 1996, p. 30)

Arbuthnot also points out that for competition to be fair, markets must be open and that while the U.S. market is largely closed to British corporations, Britain has evaluated American arms companies in a fair and objective manner.

However, foreign countries have special interest groups which pressure their Governments to buy solely domestic products. Again, Arbuthnot, in favor of the McCain Amendment, states that failure to approve the amendment "would be very unfortunate (and) the signal it would send to those countries in Europe which press for European preference would be a confirmation that they were right all along." (Muradin, 1996, p. 30)

4. Executive Branch

Each administration seeks to present a single, coordinated Executive Branch position on proposed legislation. However, the Executive Branch also has its own constituents and special interest groups that have a stake in policies of agencies outside the DoD. For example, the U.S. Trade Representatives negotiate agreements affecting the interests of various industrial sectors. The Departments of State and Commerce administer laws governing the licensing of exports. The Office of Management and Budget (OMB) attempts to resolve differences among the agencies and to coordinate the Administration's position. However, pressures and conflicting views on proposed legislation within the Executive Branch sometimes inhibit strong opposition to protectionist legislation. (Henderson, 1997)

When the McCain Amendment went before Conference, the Director of Defense Procurement (Office of Foreign Contracting) sent information to OMB

supporting the proposed amendment. However, the Commerce Department opposed the amendment and relayed this information to OMB. This caused the Executive Branch to have a non-unified position on this critical issue. (Henderson, 1997)

5. Special Interests

There are powerful special interest groups which do not want the DoD to procure weapon systems from foreign sources. These groups lobby Congress and the Executive Branch in support of protectionist measures and polices which support domestic procurement. For example, a recent article in Defense News states that "U.S. industry officials say a Pentagon effort (the Foreign Comparative Testing program) to evaluate foreign military equipment for possible purchase threatens to erode the U.S. defense industrial base." (Cooper, 1994, p. 26) Another example is a comment by Mark Rosenker, vice president for public affairs for the Washington based Electronics Industries Association, referring to the Navy's purchase of a night vision device from the U.K.: "U.S. industry should be tapped to produce these items if (industry) is able, in any way, shape or form, even if [industry] is a short period away from developing these capabilities." (Cooper, 1994, p. 26)

However, these concerns may be invalid according to Eugene Carroll, director of the Center for Defense Information, a think-tank in Washington concerned with military issues. Carroll argues that "small, low-end technology (foreign) programs may stand a chance of being funded.... However, high technology programs will be stymied by Congress." (Cooper, 1994, p. 26)

6. Program Managers

Program managers are aware of these issues and are very sensitive to the political realities of defense procurement. They are very aware that Congress holds the purse strings and has the power to kill or halt funding for any program. In light of this, a recent guest speaker (a program manager for a major weapons system) at a

weekly NPS acquisition seminar had a slide that showed the states where components of his system were made or manufactured. There were over forty states highlighted on that slide! He, along with the main contractor, is aware of the importance of having portions of the project (read jobs) in as many states as possible to ensure that it maintains political support in Congress. In fact, he called it his *Congress* slide. Program managers who are procuring foreign systems do not have this advantage. They must understand that there are potential *enemies* that may try to derail their program solely because it is a foreign acquisition. They must be proactive in the defense of foreign NDI and be able to objectively prove that by using a foreign system that they are meeting the *user's* needs in the most timely and cost effective manner.

B. DEPENDENCY PROBLEMS

"Foreign articles may offer the best technology and processes to solve design problems. Where non-developmental items are used, foreign dependency may simply be an inherent feature of such items." (Norton, 1997, p. 36) The concept of foreign dependency dictates that you must rely on an external element to fulfill certain requirements. Although there are certain advantages associated with foreign procurement, the are also dependency risks that must be evaluated by the acquisition stakeholders. An example of a recent problem associated with dependence on foreign weapon systems is described below.

During the 1982 Falklands War, France refused to honor the terms of its contract with Argentina for the delivery of Super Entendard jets and Exocet missiles. This decision by France had profound consequences for the outcome of the war. Although Argentina had great success with the Exocet missile (demonstrated by the sinking of a British naval vessel by a Exocet missile), they were not able to further

this success due to France's decision. This example illustrates the dire consequences of dependency on a foreign supplier of military weapon systems. (Norton, 1997, p. 36)

There are many advantages to utilizing domestic equipment, including greater familiarity with the equipment by the user and maintainer. Electrical requirements and connections are interoperable with other equipment and parts and supplies are unlikely to be immediately compromised by embargo or blockade. Also, the producers are more likely to be accessible and generally motivated to support the defense of their country.

With domestic procurement, surge production and equipment modification can be effected with greater ease than with foreign NDI. Purchasing foreign items negates these benefits while also presenting the potential for competitors to obtain them as well, matching capabilities or allowing them to deploy countermeasures.

Procuring weapon systems from foreign sources can also decrease the experience level of U.S. defense industry engineers and scientists. This is due to the decrease in the amount of work available for them to learn and gain experience (e.g., you can't gain experience if you don't play in the game). This can have a long term effect of hampering the development of future high-technology products. "The ability to keep up with and even drive emerging technologies will be essential for leadership in developing the next generation of weapons. These factors still remain significant in determining the world balance of power." (Norton, 1997, p. 36)

Continuous supply is also a problem with foreign systems. A steady supply of materials may be interrupted by political unrest and labor strife in the supplier nation. Acts of God or other natural causes can also interrupt the flow of supplies, along with the man-made delays of blockades or embargoes. As happened routinely

in WW II, enemy forces may take active measures to divert or destroy supplies enroute.

Domestic suppliers are sometimes heavily subsidized by the Government to sustain production capabilities for critical or unique items. With foreign weapon systems, the military does not have the ability to influence foreign suppliers to retain a reconstitution or surge capability. This could affect the U.S.'s ability to respond to wartime exigencies.

By relying on foreign weapon systems and parts, "a nation can place its armed forces at a disadvantage, while simultaneously sacrificing long-held principles and values." (Norton, 1997, p. 37)

C. CONTRACTING CONSIDERATIONS

As noted in the previous section, the large number and complexity of laws and regulations which govern Government acquisition and contracting can impede the procurement of foreign weapon systems. Even with the current push for streamlining, these impediments make it difficult for a foreign company to conduct business with the U.S. These impediments also exclude many potential suppliers, such that full and open competition does not occur. This section will explore the challenges associated with complying with the Federal Acquisition Regulation (FAR) and the Defense Federal Acquisition Regulation (DFAR), problems associated with payment terms and exchange rates, and the challenges associated with training the acquisition workforce.

1. FAR/DFAR

Even DoD agencies who wish to acquire foreign goods must deal with many impediments that adversely affect the normal contracting process. Part 225 of the DFAR contains specific procedures that must be followed when dealing with foreign acquisition. These procedures refine those found in the FAR Part 25 and specify how foreign offers will be treated. To apply the policies and procedures of Part 225, the

contacting professional analyzes and evaluates offers of foreign end products by following the following general guidelines: First, he/she must determine whether the product is restricted by DoD Authorization or Appropriations Acts or DoD policy. Next, he/she determines whether the U.S. has a Memorandum of Understanding (MOU) or other international agreement with the country. If the product is from a qualified country, the offer is evaluated under 225.105 and 225.872-4 (currently, there are only seventeen countries on the list). Next, he/she determines whether the product is covered by the Trade Agreements Act or the North American Free Trade Agreement Implementation Act. If it is, he/she evaluates the offer under FAR 25.402 and 225.105. "If the product is not an eligible product, a qualifying country end product, or a U.S. made end product, purchase of the foreign end product may be prohibited." (FAR 225.0-2) It is then determined whether the contractor is controlled by a terrorist nation, and if so, complies with 209.104(g). Lastly, it is determined how the acquisition can be affected by the Buy American Act and the Balance of Payments program. Non-qualifying countries must add fifty percent to the price (including duty). This entire process not only complicates the contracting process, but severely restricts competition.

2. Payment Terms and Conditions

In any foreign acquisition, several problems may occur due to the method of payment and the fluctuation of exchange rates. In many countries, it is customary for payments to be made prior to work commencing. This conflicts with both the fixed price and the cost type contract payment schedules utilized by the DoD. With fixed price contracts, unit price(s) are paid when the items are delivered and accepted. Progress payments can be authorized for large and long duration contracts, but are limited to 80 percent of the cost. With cost type contracts, costs are only reimbursed at regular intervals. (Arnavas, 1996, p. 158) The inflexibility of our payment system

makes it difficult for foreign companies that depend on up-front capital to conduct business with the U.S. Government.

There are basically two options for payment; payment in a foreign currency or payment in US dollars. Unfortunately, exchange rates fluctuate and this causes a problem in international contracting. For example, assume that the contract is with a German company, with payment in US dollars, and the dollar strengthens. At the time of the contract the exchange rate was US $1=DM 1.5, and the cost of the item was DM 1 million, or $666,666.66. If the dollar strengthens and the exchange rate is US $1=DM 2, the German company makes a gain of DM 333,333.33 and the US Government loses the opportunity cost of the money. (Dobler, 1996, pp. 271-272) The contracting officer must be aware of this and ensure the contract stipulates the most advantageous route for the U.S. Government, such as the inclusion of a conversion rate provision.

D. LOGISTICAL SUPPORT ISSUES

Logistical support issues have always been a problem area for DoD. This section explores a few of these problem areas and how they relate to foreign NDI procurement. These include problems caused by the shortened acquisition cycle, the supportability challenges throughout a product's life cycle, availability and spare parts, problems associated with Technical Data Packages (TDP), and the cost of additional design data.

1. Shortened Acquisition Cycle

Logistics is an area with a large potential for disaster and is one of the toughest challenges in NDI acquisition. A major cause is the shortened acquisition cycle for NDI. Because of this shortened cycle, the logistics planner is under great pressure from the very beginning of a NDI procurement. Unlike the traditional sequential development of a system, the logistical planner is unable to work through the multiple

logistics pre-production planning steps as the system develops. Instead he/she must catch up with the abbreviated and deleted phases that create a NDI's rapid procurement advantage. "All logistical planning actions such as provisioning conferences, technical data reviews and application for supply part national stock numbers must be completed as quickly as possible." (Shade, 1996, p. 9)

2. Technical Data Packages

The transition from the original foreign manufacturer production of an item to a U.S. manufacturer can cause significant problems for the program, (not to mention extending the procurement timeframe). A major portion of these problems can be attributed to problems with the transfer of the Technical Data Package (TDP). An *Americanized* TDP defines the engineering, production, and logistics support procedures required to ensure the system's acceptable performance, along with defining the systems design configuration. It contains all pertinent technical data, including quality assurance provisions, drawings, and packaging details. (Schaller, 1996, p. 41) Below are a few common problems which occur that make foreign TDP's unacceptable under U.S. standards:

- The data may be written in a foreign language, which requires that documents must be translated into English. Information or meanings may be lost in the translation process.
- The use of two different measurement systems (metric and English) can cause substantial problems in the areas of precise measurements and tolerance levels. Currently, the U.S. and U.K. are the only two major armament producing countries which do not consistently use the metric system.
- Foreign corporations may not understand the demands imposed by the U.S. in terms of TDP data required. Some foreign manufacturers use a "fit at production" philosophy. In this type of production, the accuracy of drawings used on the production floor are less critical than in a assembly-line type production process. This makes the job of accurately putting the production process on paper a difficult task. This

is unacceptable for most U.S. manufacturer's since a critical element of TDP's is the inclusion of pertinent information so that a production facility can "produce to the TDP with stringent configuration management requirements." (Schaller, 1996, p. 42)

Two recent programs that have encountered serious problems due to inadequate TDP's are the FMTV (Family of Medium Tactical Vehicles) program and the M-119 105mm Field Howitzer program. In the FMTV program, the inability of the foreign producer to produce an adequate TDP was the main catalyst in the major cost and schedule overruns which threatened the survival of the program. (Boudreau, 1997) In the M119 program, the delays caused by inadequate TDP's resulted in a two year delay in scheduled fielding. (Schaller, 1996, p.42)

3. Conclusion

The program manager must recognize the inherent logistical support risks that are associated with foreign NDI. Given this, "an acquisition decision must not be made until trade-off factors are identified, analyzed, and compared with other alternatives." (Buying Commercial and NDI: A Handbook, 1996, p. 38) The logistics planner is the key element in this process and must not only keep the program manager informed of these issues, but must ensure that logistical issues are well understood and weighted in the acquisition decision.

E. CULTURE AND COMMUNICATIONS

"The nature, customs, and ethics of individuals and business organizations from two different cultures can raise a surprising number of obstacles to successful business relationships." (Dobler, 1996, p. 272) This section focuses on impediments and challenges that occur in international trade due to the differences in culture and communication between countries. The challenges incurred with the use of interpreters, bribery as a part of normal business, and the challenge of knowing your counterpart will be briefly explored.

1. Interpreters

Anyone who has used an interpreter knows how difficult, confusing, time consuming and costly communications can be. Twice the normal time for verbal communication must be allotted if an interpreter is used, thus driving up cost and increasing schedule. There may also be differences in terminology between countries. These differences can create confusion, miscommunication and cause implementation problems during all phases of the acquisition process, but especially during the contracting phases.

2. Bribes

Gift giving and bribes are a normal part of business in many cultures, but not in others. Madeline Albright, the new U.S. Secretary of State, stated that "if an American businessman or woman bribes a foreign official in return for a contract, that American is fined or goes to jail. If a European bribes that same official, chances are he will get a tax deduction." (Defense News, 1997, p. 14) While the U.S. has policies that regulate our business ethics, other countries don't play the same game. Because the U.S. chooses not to participate in these activities, it limits the number and availability of contracting sources.

3. Knowledge

Knowledge and sensitivity about the country and culture which you deal with is vital to a good working relationship and is a challenge that must recognized and dealt with by individuals and nations. An example of understanding your foreign counterpart's differences and developing a plan to deal with these differences was a challenge faced by the 10th Special Forces Group (Airborne). 10 SFG(A) conducted training and operations in many European countries where the custom to toast your friends is an accepted and important part of the culture. The U.S. Army's policy is that no alcohol is allowed to be consumed during the duty day, but our higher

headquarters formulated a policy to allow for consumption of limited amounts of alcohol in certain circumstances. This policy allowed us to toast our friends and maintain a good working and professional relationship with them. Sometimes these small things can mean the difference between success and failure. The challenge to U.S. procurement agencies is how to identify and react to these differences.

F. TEST AND EVALUATION

"The role of test and evaluation in an NDI acquisition is exactly the same as in a typical developmental/procurement acquisition program." However, the amount of test and evaluation required for an NDI acquisition is dependent on several factors. These include the type of NDI, the amount and quality of test data available from the original RDT&E, the similarity of expected use and environment to current use, and the degree to which the proposed system is currently used. For all procurements, the purpose of test and evaluation is to "fulfill the basic tenant of T&E---risk definition." (Adams, 1992, p. xi) In this section, a few major test and evaluation issues affecting NDI are explored and evaluated.

1. Risk

There are four major areas of risk concerning the testing of NDI systems recognized by the U.S. T&E community. First, the requirements may not be fully understood. Without the correct requirements, it is difficult to ensure that the right capabilities and aspects of a system are tested and evaluated. Second, if the operational environment and intended use of the system is not clearly understood, it is difficult to test with a high degree of confidence. The third area deals with the risk associated with the definition of system interoperability and interfaces between the NDI system and the systems it must operate with. "Because an NDI system may have to operate with a system or within a system that it was not concurrently developed with, the interfaces and interoperability issues can either falsely disqualify or qualify

the NDI system." (Adams, 1992, p. xi) Lastly, the NDI test plan and program may not sufficiently cover documentation and support issues. This may lead a Service to procure a system that may not be operationally suitable or supportable and which may require additional development and supportability work in the future. (Adams, 1992, p. xi)

2. Impediments

Along with the risks, there are also impediments to the actual testing of the NDI system. Probably the largest problem in testing is the mindset of the testing community. The majority of their testing is oriented towards traditional development approaches. The challenge to the program manager is to reorient the thinking of the test community to consider non-traditional, NDI approaches. Depending on the systems' previous use, the T&E plan can be modified by deleting redundant testing. This saves the program manger time and money. (Adams, 1992, p. x) DoD's lack of experience in commercial test practices and standards is a also an impediment to streamlined testing. DoD testers must understand the commercial standards product developers use to test their systems. To avid redundant testing, these can be considered in lieu of DoD test requirements. (Buying Commercial and NDI: A Handbook, 1996, p. 56)

The need for specialized support and test equipment may also cause problems for the program manager. The use of DoD standard test equipment, although preferred, may not be feasible, and unique test equipment may be required. The need for new calibration standards and procedures to support the required test equipment must also be determined. (Buying Commercial and NDI: A Handbook, 1996, p. 46)

The need for properly trained support personnel may also cause problems. If the system is foreign, U.S. personnel may not have the training required to support the

testing of the equipment. If the training is available, it may be costly, thus adding more to the life cycle cost of the system.

The location of the testing may also pose problems and the program manager must consider the following prior to selecting a test location:

* Should the testing be completed at the contractors/host country's location or should it be tested at a domestic location?

* Will the testing require special arrangements, etc.?

* What limitations would be involved if testing occured at host country location?

* With a system that has already been fielded by the foreign country, how does the U.S. confirm their test data? Do we have confidence in it or do we believe it may be biased?

Lastly, depending on the country, the test operating and support manuals may be printed in a different language and will have to be translated to conduct the test. Also, the PM should have at least one interpreter to help with the contract country's dialogue. All of these impediments can be overcome, but all with a price, either time, money or both.

"The bottom line always should be that the T & E program effectively provides data and analysis to determine whether or not the NDI system is operationally effective and suitable in the intended environment." (Adam, 1992, p. xii) To ensure this happens, the program manager must evaluate the major T&E areas of risk and try to eliminate or minimize most of the impediments to the actual testing.

G. REQUIREMENTS GENERATION

The requirements generation process is possibly the most critical step in any NDI acquisition. Whether the NDI approach is appropriate or not is largely dependent on how the requirements document is written. The challenge that the

procurement officer has is to ensure that he/she is involved early enough in the requirements generation process to ensure that an NDI solution is possible. The user may be the expert on the requirement, but is rarely knowledgeable concerning possible solutions that the marketplace can offer. It is up to the procurement officer to conduct a thorough market research investigation (to include foreign sources) to determine what is available to fulfill the user's needs. (Shade, 1996, p. 11)

The procurement officer and the user together must formulate a realistic requirements document that reflects the market conditions. User requirements must be carefully scoped to ensure that *gold plating* or unnecessary requirements are not added onto the base requirements. "We're starting to realize that if we want to field something before it becomes obsolete, then we may have to look at what's already out there and remain flexible. We can't expect the world and get it off the street." (Norris, 1995, p. 27) We might not get the most sophisticated weapons, with all the extras, but we would probably receive a good piece of equipment at a fair price. (Norris, 1995, p. 27)

There is an old saying in the Army that a good plan executed boldly is much better that the perfect plan not executed or poorly executed. Foreign NDI can be this *good* plan. A good piece of equipment in the hands of the service member is much preferred to the *perfect* piece of equipment that is stuck somewhere in the acquisition process, and not available to the warfighter.

H. SUMMARY

Although the acquisition process can be shortened and made cheaper by utilizing NDI, there are numerous impediments, challenges and risks that the program manager must evaluate before making the selection decision. Politics, contracting difficulties, logistical support issues, problems with culture and communication, test and evaluation considerations, and user requirements are just come of the areas that

the program manager must consider. But even with these challenges, advantages abound and these will be explored in the next chapter.

IV. BENEFITS OF ACQUISITION OF FOREIGN NDI WEAPON SYSTEMS

The reduction of risk in a program is of paramount importance to the program manager. With the procurement of foreign NDI, the risks to cost, schedule and performance can be drastically reduced. Since these items have already gone through an acquisition process that included research and development, test and evaluation and production, a majority of these risks have been mitigated. Procuring foreign NDI offers the program manager the promise of risk mitigation and a lower risk means of meeting the armed services' urgent needs and operational requirements. (Steves, 1996, p. 46) This chapter will explore the program risks mitigated by utilizing foreign NDI in the areas of cost and schedule reduction, test and evaluation and with the use of the Foreign Comparative Testing (FCT) program.

A. COST REDUCTION

1. Reduced R&D Costs

R&D costs contribute greatly to the overall cost of the system. With NDI procurement, these R&D costs, although not eliminated, can be shared and the savings passed on to the end user. This reduction in the R&D requirement shortens the length of, or eliminates the need for the PDDR and EMD phases. An example of this is the acquisition of the Mobile Subscriber Equipment (MSE), a tactical communications system recently acquired by the Army. The MSE, a $4.3 billion acquisition program, saved over $500 million in R&D costs by utilizing items generally in production and commercially available. (Norris, 1995, p. 24)

2. Firm Fixed Price Contracts

Since an NDI program normally has more clearly defined requirements than developmental projects, there is usually less cost, schedule and performance risk

associated with the acquisition. "The General Accounting Office (GAO) has noted that because of the reduced risk to the Government, simpler contract procedures can be used for NDIs. These contract procedures include increased use of fixed-price type contracts." (Norris, 1995, p. 48) FFP contracts take advantage of competition in the marketplace, thereby yielding lower costs than other types of contracts. They also prevent cost overruns associated with cost plus contracts and avoid the significant delivery risks that are inherent with best effort contracts. (Shade, 1996, p. 5)

B. SCHEDULE

Decreased development cycles and shorter procurement lead times are major NDI contributors to an overall shortened acquisition fielding time. (Adams, 1992, p. vii) In an NDI program, if the milestone decision authority approves an NDI acquisition strategy, the program proceeds, depending on the degree of modification needed, directly to production (if no modification is needed), or to a combined Concept Exploration and Program Definition and Risk Reduction phase, called the Acquisition Documentation phase. In this phase, modifications are designed, made, integrated, tested and documentation is prepared for the final milestone review prior to production. (NDI Factsheet 1.5.1-2, 1994, p. 1) This can be accomplished in only one to two years instead of the five to six years normally required for the CE and PDDR phases. (Norris, 1995, p. 23)

An example of shortened procurement time in a foreign NDI acquisition is the M-119 105 mm Field Howitzer program. The U.S. Army wanted an NDI howitzer that could be fielded as soon as possible. A market survey was conducted in 1984 and the British Light Gun, the M-119, was selected as the best system. This howitzer, purchased from the U.K., skipped the CE and EMD phases and abbreviated the PDDR phase. Also, only limited OT&E testing was necessary because the M119 had been tested previously during its CE phase. The TDP was purchased from the

U.K. and the howitzer manufactured in the United States. Even with the extensive problems experienced with the transfer of the TDP package from Royal Ordnance to the U.S. arsenal at Rock Island, Illinois, the M119 went from initial market survey in January 1984 to first fielding in December 1989. (Shade, 1996, p. 6)

C. PERFORMANCE

The procurement of foreign NDI can shorten schedule, reduce cost, and give the Services a system that will meet their operational requirements. Foreign NDI programs introduce the acquisition of mature technologies, with validated and established production techniques and high quality. Availability, reliability, maintainability and supportability data are already established and available for analysis. (Steves, 1995, p. 29)

With NDI, the burden of proof is on the developer to prove that he has a superior product. DoD benefits by allowing market competition to work. This ensures a quality product that is priced by market forces. If an NDI's performance and quality are low, market forces will ensure the demise of the product. (Barb, 1987, p.7)

For the program manager, the best indicator of performance and quality of a foreign system is its use by the host country's military. If the host country's military uses and endorses the system, it is an indication that it is a quality system. However, if the item is not used by their military (such as the export model of the Soviet T-72), it is a clear indication that it does not meet the performance needs of their military and probably should not be acquired. (Buying Commercial and NDI: A Handbook, 1996, p. 3)

D. TEST AND EVALUATION

NDI acquisition allows for previous test and performance data to prove producer acceptability, suitability, and military operational effectiveness and

suitability. This data can come from commercial manufactures, users, other Services, or foreign countries. (Norris, 1995, p. 23) The general guidance for commercial and NDI acquisitions is to conduct testing only when existing data (contractor or other) is sufficient. This is a huge benefit for the program manager who must allocate resources (time and money) towards T&E.

However, as with any program, T&E for an NDI program must fulfill the basic tenant of risk reduction.

> The program must contain enough testing to define risk in terms of how the system meets the functional specification in the intended operational environment. The program must adequately define the system's operational effectiveness and suitability. With risk definition in hand, the T&E program must met legal requirements, like required mandatory testing and reporting requirements for milestone decisions. Given the variety of NDI approaches that may be employed, it is imperative that the acquisition strategy clearly specifies, with the agreement of the testing authority, the level of testing that will be performed on NDI systems and the environment in which those systems will be tested. (Adams, 1992, p. 35)

With this is in mind, the program manager must, in concert with the developmental and operational test personnel, develop a plan to ensure the correct mix of testing is completed while taking advantage of the test data already available. To reduce redundancy while still obtaining the required data, the following can be utilized:

1. Obtain and assess contractor test results.
2. Obtain usage/failure data from other customers.
3. Observe contractor testing.
4. Obtain test results from independent test organizations (e.g., Underwriter's Laboratory).

E. FCT ADVANTAGES

FCT funds support the procurement or lease of foreign test articles and subsequent test and evaluation by the sponsoring service. Additional goals of the program are to reduce duplication in research and development, enhance standardization and interoperability, improve cooperative support, and promote competition and desirable international technology exchange. (FCT Homepage, 1996, p.1)

1. Program Advantages

Utilization of the FCT Program allows the DoD to leverage the RDT&E investments of friendly nations to fulfill our own needs at accelerated program schedule and reduced cost. (Vanderwerf, 1996, p. 15) A program manager should to be aware of this program and consider it during the acquisition planning process. The use of FCT options could be an avenue to meet mission need while mitigating the cost, schedule, and performance risks discussed earlier in this chapter. The FCT Program can capitalize on the benefits of acquiring NDI items, which include the:

* Quick response to operator needs;
* Elimination or reduction of research and development costs;
* Application of state-of-the-art technology to current requirements; and
* Reduction of technology, cost, and schedule risks. (Vanderwerf, 1996, p. 12)

2. FCT Nomination Process

The nomination of a foreign system for the FCT program must meet a prescribed set of criteria to ensure that the proposal will be favorably considered for approval by OSD. To comply with this requirement, each Service and USSOCOM has established candidate nomination processes to screen their own proposals. Listed

below are the criteria that must be met for a foreign system to be nominated for OSD FCT Program support and funding.

* Demonstrate that the system either meets a requirement for which no U.S. system exists or it provides significant cost, schedule, or performance benefits over an existing domestic system. This must be supported by the completion of a thorough market investigation.

* Insure that there are no offshore procurement restrictions that will effect the procurement of the item. Also, identify the potential for establishing a domestic source to manufacture the item.

* Funding must be identified and made available for the foreign item being nominated.

* Address the willingness of the Service and the foreign government or industry to share costs.

* "Address: 1) allied interoperability and support considerations, 2) other DoD components' interests in the item, 3) security concerns, and 4) end-use certification requirements." (Buying Commercial and NDI: A Handbook, 1996, p. 58)

3. FCT Participation

Approximately 20 countries, to include Kazakhstan, Russia, and the Ukraine have participated in this program. Some of the purchases that the U.S. has made after testing by this program are the French DURANDAL Runway Attack Weapon, Australian Transportable Recompression Chamber and the German NBC Recon Vehicle System. In addition, thirty-one projects have been selected by the Department of Defense to receive Fiscal Year 1996 funding. (FCT Homepage, 1996, p. 3)

F. SUMMARY

Cost, schedule and performance risks can be significantly decreased by the use of foreign NDI as a procurement tool. The established cost structure, minimized

production start up costs and economies of scale all contribute to minimization of system risk. The time, cost and performance savings achieved, along with those associated with test and evaluation and the FCT program make the option of utilizing foreign NDI to fulfill a requirement very attractive.

V. MADS ACQUISITION CASE ANALYSIS

A. INTRODUCTION

This chapter provides an overview and analysis of the acquisition of the Maritime Air Delivery System (MADS) from a program management perspective. The focus of this chapter is on key issues that have, or will have an important impact on the acquisition of the MADS. These key issues will be analyzed within the context of the impediments, challenges and advantages discussed earlier in this thesis. These issues were derived by interviewing various members of testing agencies and the USSOCOM FCT office and by analyzing numerous program documents.

B. DESCRIPTION OF THE MADS

1. User Requirements

The requirement for an airdrop insertion capability of NSW 24 foot RHIBs into maritime environments came from the Commander of Special Forces, Europe (SOCEUR). The SOCEUR Commander wanted to improve the effectiveness and responsiveness of his Special Boat Units (SBUs) to conduct immediate operations. The current procedure is for equipment and personnel of the SBUs to be transported by naval craft or ground transportation to their deployment area. Both of these modes of transportation are time consuming, require extensive coordination, and are dependent on another Commander's assets. The SOCEUR Commander identified the requirement for a system that would allow him to deliver a 24 foot RHIB to a maritime drop zone quicker and without depending on outside assets. The constraints imposed on the system are that it must be transportable by C-130 aircraft, using only unit personnel and be recoverable for training purposes. The intent is that the system be manned and sustained without depending on another unit or increasing the manpower of the SBUs. (Phillips, 1996, p. 3)

2. System Description

"The MADS is an airdrop platform specifically tailored to deliver a RHIB to a water drop zone in such a manner that the RHIB is immediately ready for use with little or no derigging required." (TEMP, 1996, p. 3) The MADS is comprised of three major subsystems: a cradle; extraction, deployment, and main chutes; and a 24 foot RHIB. The cradle is similar in appearance to a boat trailer and is designed to hold one 24 foot RHIB. (TEMP, 1996, p. 3)

The MADS is loaded into the drop aircraft in the same manner as standard heavy drop loads. "The rigged system is platform extracted by a drogue parachute; as the MADS clears the trailing edge of the aircraft ramp, an extraction force transfer device releases the tie downs holding the RHIB to the cradle." (TEMP, 1996, p. 3) During extraction, the cradle separates from the RHIB and descends under the drogue parachute, while the RHIB descends under G-12 parachutes. When the cradle impacts with the water, the main canopies release and the RHIB rides free in the water without encumbrances to its hull or superstructure. Naval Special Warfare Unit (NSWU) personnel exit the aircraft immediately following the extraction of the MADS and follow it to the water drop zone. (TEMP, 1996, p. 3)

The cradle is designed to be sunk in combat operations, eliminating most telltale debris. By inserting optional floatation devices, the cradle will float, permitting the system to be used indefinitely for peacetime training missions. (TEMP, 1996, p. 4)

3. Current Status

Two prototypes have been acquired and recently completed final air worthiness and air drop certification procedures at the Army's Natick Research Lab. This certification included modifications to the roller assembly and the completion of documentation and training plans. The two prototypes were returned to SBU-20 at

Little Creek Naval Base, VA in April 1997 in anticipation of scheduled operational test drops. These airdrops were delayed due to the need to retrain operational personnel (combat craft crewmen) in required skills (airborne, rigger, etc.), and the lack of dedicated aircraft support for the missions. The current plan is for a series of three airdrops to be conducted in summer 1997 to test for operational effectiveness and suitability requirements. A "proof of concept" phase will be conducted in September and October 1997 when the two systems are deployed to EUCOM to be used in support of an operational exercise. (Steinke, 1997)

In May 1997, the MADS will go in front of the USSOCOM Requirements Review Board (RRB). The RRB will assess, prioritize and recommend to the Board of Directors (BOD) further action on the MADS. The BOD will either approve the concept and the MADS will become a "program", or it will disapprove the concept. If the MADS is given program status, a procurement decision will be made during summer 1998 after the Integrated Logistics Support Plan (ILSP), test reports, Release for SOF Use, and the safety certification are completed and briefed to the BOD. (Steinke, 1997)

C. KEY ISSUES

Key MADS issues will be analyzed against the challenges, impediments and advantages associated with foreign NDI discussed earlier in this thesis. Some of these issues relate directly to the benefits and challenges discussed in the previous chapters, while others relate to issues which were not previously examined. Key issues are categorized for discussion and analysis into the following seven areas.

* Formal Acquisition Process,

* Program Management,

* User Requirements,

* Test and Evaluation,

* Affect of the MADS on the Procurement of the 10 meter RHIB,

* Political,

* Establishment of USSOCOM FCT Office.

D. ANALYSIS OF KEY ISSUES

1. Formal Acquisition Process

a. Background

On 22 April 1993, the Commander, Special Operations Command, Europe (SOCEUR) published a Mission Need Statement (MNS) that identified the need to "tactically insert maritime craft directly into the ocean without having to depend on aircraft landing first." (TEMP, 1993, p. 1) This MNS was sent to the Commander, Naval Special Warfare Command (NSWC), Coronado, CA, who is the proponent for the Special Boat Units. NSWC forwarded the SOCEUR MNS to USSOCOM at MacDill Air Force Base (AFB), Tampa, FL.

In January 1994, the USSOCOM Requirements Review Board (RRB) approved the MNS and ranked it 24th on the USSOCOM Integrated Requirement Priority List (IRPL). USSOCOM then directed NSWC to investigate the feasibility of adding this capability to the mission of the SBUs. (Proposed Acquisition Strategy, 1994, p. 1)

An acquisition strategy was developed by a USSOCOM liaison officer working at NSWC. The strategy identified the following three major points.

- First, this is a limited acquisition action with only two systems to be purchased.

- Second, this action addresses a limited interim capability and does not fulfill the objective MADS requirement.

- Third, an NDI system with a proven operational history is available and offers a low risk solution. (Proposed Acquisition Strategy, 1995, p. 3)

The CNSWC identified $110,000 in procurement funds to procure the two systems and $95,000 in Operations and Maintenance (O&M) funds to conduct associated testing. The proposed acquisition strategy "seeks procurement approval for a limited capability only. Subsequent procurements are dependent on clarification of objective RIB (sic) inventories and refinement of MADS operational requirements." (Proposed Acquisition Strategy, 1995, p. 6)

A draft Operational Requirements Document for an air dropable RHIB was developed by SOCEUR and forwarded to CNSWC in January 1995. During the remainder of 1995, NSWC personnel conducted a market survey (to identify a system which provided the necessary capabilities), developed a proposed acquisition strategy, and developed a Test and Evaluation Master Plan. (Steinke, 1997)

The market survey identified the MADS as the only viable option available. The MADS is produced by Aircraft Materials, LTD (AML), U.K., under license to the Ministry of Defence (MOD), U.K. and has been in service with British SOF for almost ten years. (Proposed Acquisition Strategy, 1995, p. 1)

On 2 February 1996, USSOCOM sent an Out of Cycle Candidate Nomination Proposal for the MADS to the FCT for consideration. Although FCT funding was approved, NSWC bought the two test articles with their own O&M funds so they could meet the proposed DT/OT testing schedule (an important part of which would be conducted in a combined British and U.S. airborne operation to be conducted in North Carolina in the spring of 1996). (Steinke, 1997)

b. Discussion and Analysis

When the Out of Cycle FCT proposal went before OSD, they were under the assumption that the MADS was already an approved program (the proposal

included the MNS and a draft ORD). OSD prefers that FCT funds support test and evaluation in support of a procurement (Milestone III) decision, but also authorizes funds for concept and development action or technical assessment (Milestone I and II) decisions. (Steinke, 1997)

This was to be a limited acquisition action with only two systems purchased, to address a limited interim capability and not completely fulfill the objective MADS requirement. As stated in their acquisition strategy, NSWC wanted to use the funds as a technical assessment tool to help them verify and complete their ORD requirements, versus a procurement decision tool. NSWC's strategy was sound but may not have been understood by OSD. (Steinke, 1997)

Up to this point, every Command had followed the proper acquisition process. Problems started when delay in receipt of the FCT funds "forced" NSWC to purchase the two test articles with their own funds in order to stay on schedule. Although the FCT funds were approved, they were not available in time for NSWC to use them. The delay in funding occurred because a system was not in place which allowed OSD to send USSOCOM RDT&E funds. Nor was there a system which allowed USSOCOM to receive anything but MFP 11 funds (the MADS was the first FCT funded acquisition for USSOCOM and this situation had never been encountered before). There were other comptroller associated problems, but the bottom line is it took seven months for the funds to be received by USSOCOM. (Steinke, 1997)

NSWC purchased the two test articles using O&M funds, believing they would be reimbursed with FCT funds at a later date. This did not happen because NSWC could not accept the RDT&E funds from USSOCOM. FCT funds are RDT&E funds and NSWC is not chartered to accept this type (color) of funding because they are not a procurement activity. (Steinke, 1997)

Prior to the establishment of USSOCOM in 1987, NSWC and the other Services' special operations forces procured items in this fashion. Since the establishment of USSOCOM, this type of procurement is not authorized. However, there is still the "mind set" that this is the way to conduct business. As such, the Operations shop authorized the expenditure without first checking with the comptroller to see if it was appropriate. The end result is that NSWC cannot be reimbursed by USSOCOM for the $110,000 it spent on the procurement of the test articles. (Steinke, 1997)

c. Recommendation

USSOCOM FCT proposal procedures should be clarified to ensure misunderstandings between OSD and USSOCOM on the status of a nomination are eliminated. USSOCOM should continue to use the FCT Program to procure test items and funding for test and evaluation to support their acquisition requirements in concept and development and procurement.

2. Program Management

a. No Officer-in Charge (OIC) of Acquisition Effort

(1) **Background**. An OIC or program manager was not assigned to the MADS acquisition from the time the MNS was approved in January 1994, (through the procurement and initial testing) until the FCT office was established in July 1996.

(2) **Discussion and Analysis**. Prior to the establishment of the USSOCOM FCT office in July 1996, there was not a dedicated individual or element organized to deal with foreign NDI and FCT funding. The USSOCOM J3E was the staff section which had the responsibility for this requirement, but this office had little experience in dealing with FCT or foreign NDI. When the MNS was approved by the RRB and it became known that NSWC was actually going to procure

test articles, J3E should have tasked a USSOCOM acquisition element to take the lead in the acquisition effort (as stated previously, the MADS was the first system that actually received funding from FCT). As a procurement dealing with maritime operations, the logical choice should have been to task PEO Maritime and Rotary to lead the effort. An alternate solution would have been for NAVSEA PMS 340 to head the effort. (Steinke, 1997)

The USSOCOM FCT office was established in July 1996 as a specific function and responsibility of the USSOCOM developmental test officer, six months after procurement and initial testing of the MADS, and over three years after the approval of the MNS. During this period, no "champion" was appointed to ensure a complete and adequate assessment process. As a result, money was never earmarked by USSOCOM to procure the MADS. (Steinke, 1997)

(3) **Recommendation**. Before the acquisition process starts, designate an OIC or program manager, with the appropriate responsibility and authority for all actions. This individual should come from either the Service or appropriate USSOCOM PEO shop. This individual will provide the experience and continuity that is critical to program success.

b. Cost, Schedule and Performance

(1) **Background**. With the procurement of the MADS, the risks to cost, schedule and performance have been drastically reduced. Since the MADS has already gone through an acquisition process that included research and development, test and evaluation and production, a majority of these risks have been mitigated.

(2) **Discussion and Analysis**.

(a) **Cost**. Because of the clearly defined requirements, a FFP contract was utilized for the initial acquisition of the two test articles. The use

of this type of contract reduced the cost, schedule and performance risks which are normally associated with cost reimbursable contracts. (FCT CNP, 1996, p. 6)

It is estimated that $1.5 million dollars is necessary to initiate a U.S. based program to fulfill SOCEUR's requirement. The procurement and test of the two MADS test articles is estimated to cost approximately $500,000 (of which FCT funds will cover all but the initial $110,000 spent by NSWC to purchase the two test articles). This is a cost savings of approximately $1.4 million for USSOCOM. (FCT CNP, 1996, p. 6)

Additional cost savings have been realized by the use of FCT funds. Parachutes and associated equipment were bought to support test and evaluation and can be kept by NSWC following testing to be used as operational equipment. Also, FCT funds can be used to pay for some TDY costs to support the "proof of concept" tests in EUCOM. Since these elements will participate anyway, savings in O&M can be realized. (Steinke, 1997)

(b) **Schedule**. The decreased development phase (limited to rigging procedures, rigging equipment and modifications to the side rails and the roller pads on the cradle) associated with the MADS acquisition is a major contributor to the shortened acquisition process. If the MADS is given program status, a procurement decision will be made during summer 1998 after the ILSP, test reports, Release for SOF Use, and the safety certification are completed and briefed to the BOD (MDA). This decision is called a Milestone 0/III decision because all actions that are normally conducted during phases 0, I, and II, (CE, PDDR, EMD) are accomplished simultaneously. (Steinke, 1997)

(c) **Performance**. The MADS is a mature system that has been in service with U.K. SOF for almost ten years. During this time, there have been over 100 operational drops without a malfunction. (Proposed Acquisition

Strategy, 1995, p. 1) As a mature system, availability, reliability, maintainability and supportability data are already established and available for analysis.

The best performance indicator for NSWC and USSOCOM is that the U.K. SOF units have used the system for ten years. Host country military use and endorsement of the system is a clear indication of a quality system. In fact, during the initial testing by the U.S., the cradle (the part of the system produced by AML) has always functioned properly). The MADS is a proven system which will satisfy an urgent operational requirement for COMSOCEUR.

(3) **Recommendation**. Continue to investigate the use of foreign NDI to satisfy user requirements. The benefits to cost, schedule and performance (as noted above) can dramatically reduce program risk. Continue to use the FCT Program to assist in this endeavor, taking advantage of the funds available for procurement of test articles and test and evaluation.

3. User Requirements

a. Background

If the MADS is designated a program, an Integrated Logistics Support Plan (ILSP) will be completed prior to the MS 0/III (procurement) decision. This ILSP will contain a section which addresses Human Resource and Manpower issues. The requirement in the MNS for autonomous operation of the MADS without affecting current manpower will be a critical issue to be analyzed during the execution of the ILSP. (Steinke, 1997)

Combat Craft Crewman (CCC), Naval Enlisted Classification 9533, operate various equipment within NSWC, to include three types of RHIBs and the MARK V Special Operations Craft. The RHIBs are deployed in detachments consisting of two boats each. The 24 foot RHIB detachment is manned with six

crewmen (three per craft), consisting of a detachment OIC/coxswain and two each crew/operator per craft. (Phillips, 1996, p. 5)

b. Discussion and Analysis

With the current requirement from SOCEUR of autonomous operations, additional skill requirements for MADS personnel will expand tremendously. At a minimum, each crew member will need to be both static line and military free fall (MFF) qualified to meet the intent of the SOCEUR Commander. In addition, one member of the three man crew must become qualified in the following areas:

* Jumpmaster (both static line and MFF).
* Military Parachute Rigger (both personnel and equipment).
* Equipment Specialist (MFF specific equipment). (Phillips, 1996, p. 7)

Although the previous skill requirements can be achieved, there are several impediments which impact on their success. These impediments are discussed next.

1. The additional skills requirement requires a revision to the initial and annual training requirements for each crew member. To modify the existing training forecast anywhere in the pipeline impacts the number of crewmen available for duty. In addition, the aforementioned skills are difficult and most have a high training attrition rate. The probability of increased attrition rates as the trainee progressed through required training would cause an automatic increase in the number required to graduate from the basic Combat Crewman Course. (Phillips, 1996, p. 8)

Another challenge is getting the crewmen assigned to MADS equipped detachments (two craft per detachment) trained in these additional skills. Detachments would need to rotate through a "stand down period" during which the crewmen would have to become qualified in static line parachuting, followed by MFF (once the required number of static line jumps has been made).

Selected crewmen would then be required to become qualified in the other skills previously mentioned. This would take an extensive period of time (six months, assuming all personnel pass these schools on a first time basis, which is unlikely), and impact on the other detachments by increasing their deployment times and creating mission shortfalls. (Phillips, 1996, p. 8)

2. Another problem is obtaining the quotas for the required schools. Each required skill is taught at an Army installation within the Training and Doctrine Command (TRADOC). Obtaining the required quotas necessary to support this requirement will impact other Services by increasing the number of instructors needed, or by decreasing the number of slots available to other Services. (Phillips, 1996, p. 9)

3. The added sustainment training requirements detract from mission skills. The amount of sustainment training required for each skill ranges from a single static line jump required every quarter to approximately a month's worth of certification training required per year for MFF operations. With the addition of the MADS specific skill requirements, deterioration will occur in the other required skill areas, affecting the unit's combat effectiveness. (Phillips, 1996, pp. 9-12)

All of the aforementioned impediments have a cost associated with them which must be considered in the overall life cycle cost of the MADS. The increase in the number of recruits will increase manpower costs, and the costs of the initial and sustainment training. There is also the added cost of incentive pay associated with the new skills.

Although the initial procurement and maintenance costs of a MADS are very low, the life cycle costs associated with training and maintaining the crewmen's additional skills make the acquisition of the MADS (as the MNS is

written) impractical for the Services. There are, however, other manpower options that meet the MADS operational requirements and these are discussed next.

Manpower Option. The following is an option which would satisfy the mission requirement of deploying a RHIB, but not satisfy the MNS requirement of autonomous operations. Army and Air Force units and personnel assigned to EUCOM have the necessary skills to conduct the tasks the crewmen are now being asked to perform (jumpmaster, rigger, etc.). These personnel are available to support this type of mission and would require little train-up on MADS specific equipment (the 1/10 SFG(A) is stationed in Stuttgart, Germany, along with the NSWU and has rigger personnel who could easily support this mission). Having the Army perform these tasks reduces the additional skill requirements for the crewmen to only static line and MFF parachuting. (Steinke, 1997)

Depending on how tactics, techniques and procedures drive the requirements for the crewmen, the MFF qualification may not be required. For example, the results from the operational tests and the EUCOM exercise may dictate that the MADS will be dropped from low altitude, negating the requirement of MFF qualification for the crewmen. (Steinke, 1997)

As stated in Chapter III, requirements generation is possibly the most critical step in the acquisition process. As the MADS case illustrates, the failure of SOCEUR and NSWC (the users) to conduct an analysis of the human resource issues may have a serious impact on the procurement of this item.

c. Recommendation

The need to think joint or "purple" is particularly important in this situation because the Navy cannot afford to acquire the MADS with the current requirement for autonomous operations. The Army and Air Force already have the skills required to support this mission. Because of the manpower and cost impedi-

ments discussed earlier, they should be tasked to support this mission. The Navy crewmen should acquire the minimum additional skills required to conduct this operation. Redundant skills cost money and CINCEUR already has the required skills to meet the requirement.

4. Test and Evaluation Issues

a. Background

(1) **Prior Test Information**. The British version of the MADS has been in service with U.K. SOF for almost ten years where it has been used to drop their 8 meter RHIBs. There have been over 100 operational drops without a system malfunction. (Proposed Acquisition Strategy, 1995, p. 1)

The British system uses U.K. rigging procedures and rigging equipment. However, NSWC requires the use of U.S. standard rigging procedures and equipment to minimize the logistical impact and meet U.S. safety standards. This requires the development of new rigging procedures using U.S. standard items. Natick Laboratories indicated that this is feasible and have identified no potential problems. (Proposed Acquisition Strategy, 1995, p. 3)

The cradle system requires a modification to the side rails and roller pads and the manufacturer has offered a product improvement as a modification solution. With these modifications, the system should be compatible with U.S. aircraft. However, testing of this modification will be an important aspect of the airdrop certification process. (Proposed Acquisition Strategy, 1995, p. 3)

The U.K. will be the data source for establishing operational suitability of the system. The baseline will be validated by subsequent operational testing. OT&E will incorporate testing by the Ministry of Defense (U.K.) and a two phase user test conducted by NSWC units. (TEMP, 1996, p. 2)

(2) **Developmental and Operational Testing**

(a) **Test 1**. The MADS first combined DT/OT was conducted at Hurlburt Field on 25 January, 1996.

> As the load was extracted from the aircraft, a malfunction of the boat recovery system occurred (22' deployment parachute prematurely fell off the load due to inertia of the parachute). The 22' RS appeared to somewhat hang up on the load and was not properly deployed or inflated (video was poor quality). One of the releasable static lines released properly but internally (sic) while the other did not release, causing some damage to the aircraft. The load exited properly and the cradle separated from the boat as designed. The recovery parachutes to the cradle deployed properly and the cradle was recovered. The boat free fell for about 1000' before one G-12 was aero-deployed. After another 1000', another G-12 deployed. The boat was successfully recovered by the two G-12s. (Chan, Trip Report, 1996, p. 1)

During post malfunction review, other malfunctions were found which include tearing and friction burns to equipment and entanglements of G-12 parachutes. The Natick engineer recommended that further DT/OT testing be postponed until additional developmental testing was completed. However, the Navy and USAF (C-130 aircrew) decided to continue testing pending approval by Systems Command and Air Combat Command (ACC). The ACC operates combat-coded fighters, bombers, tankers, and reconnaissance aircraft. ACC had concerns for aircrew and aircraft safety and subsequently withdrew approval for testing of the MADS on C-130 aircraft. (Chan, 1997)

(b) **Test II and III**. A meeting was held on 12 FEB 1996 at Virginia Beach, VA to resolve airdrop concerns regarding the MADS. Participants included NSWC, Natick, 18FTS/TO (C-130 unit) and ACC personnel. At the meeting, all problems were resolved to the satisfaction of the participants and a revised Proposed Test Plan was approved. IPRs were conducted between the

different organizations to work out any other problems. (Chan, Trip Report, 1996, p. 1)

The Defense Evaluation Support Agency (DESA) was selected to conduct the remaining operational test and evaluation. A second DT/OT test was conducted at Little Creek Naval base in early spring and verified the changes made to the rigging and extraction. On 2 May 1996, the first MADS OT drop was conducted at Port Royal, SC. According to DESA, the airdrop was "flawless." (Merrit, 1996, p. 1)

b. Discussion and Analysis

(1) **Problems and Impediments Encountered**. There was an assumption by both the user and the sponsor that the testing would be a very straight forward process. Slight modifications would be made to the MADS and rigging procedures, and the system would be pushed out of the back of a U.S. C-130 without complications.

However, this was not the case. The British system uses an entirely different and incompatible means of extraction (extraction by main parachute). A replication of the U.K. approach was not an option due to U.S. airdrop procedures. Consequently, Natick personnel had to design a unique means to extract and deploy the recovery parachutes. This was not NDI, this was developmental airdrop and the technical risk was considerable. When the requirement was given to Natick at the beginning of 1995, it was given to someone with little SOF airdrop experience and put on the "back burner" due to its unfunded status. It was also treated as a standard certification effort when it was really developmental airdrop. A new engineer assigned to the MADS in December 1995 investigated and highlighted the problems associated with the developmental airdrop. The user and sponsor were warned of this problem in January 1996, but because of the late date, they were not

interested in hearing about potential show stoppers, and the testing was conducted as scheduled. (Chan, 1997)

Test 1. Problems occurred during the combined DT/OT conducted at Hurlburt Field. Due to time and resource constraints, developmental testing was not completed at an adequate developmental test location, such as Yuma Proving Grounds (YPG), prior to the testing at Hurlburt Field. The extraction and deployment system should have been tested prior to it being used on the actual load, but it was not. Instead a combination DT/OT was conducted, which may have been appropriate for a true NDI acquisition, but was not appropriate in this situation. The end result was a failure of the system to deploy correctly. As a result of this failure, a C-130 aircraft was slightly damaged. (Chan, 1997)

This failure occurred because there was not a positive way to release the deployment parachute. Initially, a non-breakaway static line, whose metal components beat against the plane, was used. The problem was solved by using a releasable static line, which is a non-fielded item. This could have been avoided if appropriate testing of an extraction system was certified prior to the actual operational test. (Chan, 1997)

Video support was poor at Hurlburt Field during this critical testing. Film crews with no real airdrop experience were used to film the test. Consequently, after the initial malfunction, there was little video evidence of what went wrong. A T&E site (such as YPG) would have had professional video support, which is absolutely necessary for post mortems. The engineers had to guess on a fix to the problem; luckily it worked. (Chan, 1997)

Both the Navy (driven by operational considerations) and the USAF (aircrews) decided to pursue additional testing despite the test results and concerns of the Natick engineer. At this point in time, no one was clearly in charge

of the program. If it was pure DT, the engineers from Natick would have been calling the shots, but it wasn't, and they weren't. The Commander of SBU-20 finally took charge of the operation and due to the need for expediency, the decision to go forward with another test flight was made. ACC's concern for its aircrews and aircraft were well founded and they made the correct decision to cancel testing until a viable test plan could be proposed. (Chan, 1997)

(2) **Advantages**. As stated in Chapter IV, a large advantage for foreign NDI in test and evaluation is the use of previous test and performance data from other countries to prove military operational effectiveness and suitability. In this case, the U.K. data was the source for establishing operational suitability of the system. Since the basic system is a mature, well proven design, only a limited number of issues needed to be examined to validate the system. These issues include the modifications made for DASH 4A compatibility and validation of both air items and draft rigging procedures using U.S. equipment. All the testing required by the manufacturer and the U.K., e.g., the suitability of the cradle, did not have to be replicated by the U.S.

c. Recommendations

Test requirements must be ascertained and confirmed prior to determining the test assets and resources required. If developmental testing is required, it is imperative that it occur prior to combined developmental and operational testing. If the need for developmental testing is a prerequisite for viable and safe operational testing, it must be conducted to ensure a safe and worthwhile operational test. The urgency to meet schedule should never outweigh safety issues.

USSOCOM units should continue to leverage the inherent advantages of testing foreign NDI. The reduction of required tests decreases schedule time and cost for the program.

5. Effect of MADS on the Procurement of the 10 Meter RHIB

a. Background

NSWC is in the process of procuring a 10 meter RHIB as a replacement for the 24 foot RHIB currently in the inventory. The 10 meter RHIB program is an established program, with the first unit fielded in summer 1998. The 10 meter RHIB has no airdrop requirement in its ORD. (Steinke, 1997)

b. Discussion and Analysis

The requirement for a MADS capability is a top priority for COMSOCEUR, who has revalidated the requirement three times in the last three years. SOCCENT has also come on line and validated this requirement, bringing the total number of required systems to 16. Since the 10 meter RHIB is not air dropable, these SOCs will need to maintain a certain portion of their 24 foot RHIBs instead of replacing them with the new 10 meter RHIB. (Steinke, 1997)

There are no procurement dollars for MADS identified in the current POM. However, the USSOCOM J8 (Comptroller) stated that he would decrement the 10 meter RHIB program to pay for the procurement of the MADS. This funding would be available due to the reduced number of 10 meter RHIBs required due to the retention of 24 foot RHIBs. NSWC will brief the full repercussions of this action at the next RRB. (Steinke, 1997)

The RRB will staff this issue to the theater CINCs and to the USSOCOM service components prior to their recommendation to the Board of Directors. It is possible that other elements will want this capability, expanding the basis of issue plan. (Steinke, 1997)

c. Recommendation

USSOCOM's mission is to support the theater CINCs and their requirements. To do this the 24 foot RHIB must be retained for the required number

of detachments. Since funds are not identified in the current POM, 10 meter RHIB funds (which would have been used to procure these craft for the CINC's) should be decremented to ensure funding for the procurement of the MADS.

6. Political

a. Background

As stated earlier, Congress is the major force behind impediments toward free trade. To counter this, foreign lobbies pressure Congress to rebut isolationist policies and support international trade. They argue that the procurement of weapon systems should be done on a best value basis.

Since each FCT project is funded by Congress by individual line item, each project has visibility and potential interest by Congress even before program designation. This visibility affords the foreign lobbyist the opportunity to influence the funding and procurement decision.

b. Discussion and Analysis

The analysis of the MADS identified no specific political issues that impacted its acquisition. However, issues did surface that are pertinent to the future procurement of foreign NDI by USSOCOM and are discussed next.

Foreign corporations and countries are aware that USSOCOM has limited requirements and that most contracts will be neither large nor extremely profitable. However, they believe that U.S. special operations forces are the premiere SOF in the world, and if they can get USSOCOM to procure their products, they can use this fact as a huge selling point when trying to market their product to other foreign SOFs. Because of this, political ramifications can be way out of proportion to the amount of money spent on the FCT programs. (Steinke, 1997)

Most of the foreign corporations conducting business with USSOCOM have lobbyists in Washington, D.C. Their job is to promote their respective programs

to Congress. For example, BOFORS of Sweden has a full time lobbyist in D.C. whose only job is to promote the Joint Ranger, Anti-armor, Anti-personnel Weapon System (JRAAWS) Phase II program to Congress. This lobbyist was able to get two million dollars specifically "earmarked" for the JRAWWS Phase II program, something neither the program manager nor the FCT Program office was able to accomplish. This type of influence can also work against USSOCOM. There are examples where pressure from foreign corporations or countries prolong programs that, according to some sources at USSOCOM, should be terminated, but due to intervention, remain alive. (Steinke, 1997)

Besides lobbyists, foreign countries and corporations have other means available to influence Congress or other acquisition officials. Their embassies can contact the State Department, Ministers of Defense can contact the Secretary of Defense, and representatives can contact the FCT office or contact the Under Secretary for Defense (Acquisition and Technology). These types of actions have occurred and will continue occur in the future. The challenge to the program manager is to understand these external forces and devise a strategy to take advantage or counter them. (Steinke, 1997)

c. Recommendation

As stated above, the program manager must devise a strategy to take advantage of these forces or counter them. To do this, he must understand the political issues associated with his program and be sensitive to the realities of foreign NDI procurement. Those issues that are pertinent to his program must be analyzed and their effect continuously monitored during program concept, development and execution.

7. Establishment of USSOCOM FCT Office

a. Background

The FCT Program was established in 1987 to help facilitate the testing and procurement of foreign NDI items. Since that time, the separate Services have created their own FCT offices to coordinate this function. The USSOCOM FCT office was established in July 1997 as a functional responsibility under the Developmental Test Office. Every year, the Services' special operations components identify foreign systems or items that might satisfy a validated SOF requirement and submit them to the USSOCOM FCT office prior to formal submission to OSD. (Steinke, 1997)

b. Discussion and Analysis

Although the USSOCOM FCT office was established after the start of the MADS acquisition process, it has been the catalyst that has kept the program alive and on track. It is expected to have a positive effect on future foreign NDI procurements as well.

The USSOCOM FCT officer has developed a Candidate Nomination Proposal process (which is similar to the other Services) which identifies criteria that must be met for submission of the item to OSD for FCT approval and funding. By following this process, the Services' special operations forces will be able to accurately identify those items which meet the criteria and will be eligible for consideration. (Steinke, 1997)

There is currently only one FCT officer (who, with his normal duties, can only dedicate 30 percent of his time to FCT), along with a contract civilian (paid for with FCT funds) to perform all the necessary functions. The Services have FCT shops with anywhere from 4 to 9 personnel assigned. Currently, the USSOCOM FCT

office is utilizing 25 percent of available FCT Program funds, while having 50 percent or fewer personnel assigned compared with the Services. (Steinke, 1997)

The FCT Program allowed USSOCOM and NSWC to utilize funds to test and procure the MADS, provided that the comptroller issues were settled. These funds help leverage the RDT&E investments of our allies and satisfy our own needs at a reduced cost and accelerated program schedule. Risks to cost, schedule and performance were mitigated because of the use of the FCT funds.

c. Recommendation

The Candidate Nomination Proposal (CNP) must be adopted and used by USSOCOM units to ensure a streamlined submission process. Additional personnel need to be assigned to the FCT office to ensure that the benefits of the FCT Program are realized.

VI. CONCLUSIONS

A. SUMMARY

USSOCOM program managers and other acquisition professionals are faced with the challenge of quickly obtaining quality equipment at an affordable cost. Procuring NDI weapon systems from foreign sources is one way in which USSOCOM is attempting to outfit its units quickly while combating the procurement shortfalls brought on by the recent decreases in funding levels.

In an effort to provide program managers with information about foreign NDI, this thesis presented an overview of factors that impact procurement of foreign NDI. These factors included developing a common foundation of knowledge by examining the U.S. history of procuring foreign weapon systems and NDI from 1933 to the present; examining the current policies and directives which affect the acquisition of foreign weapon systems for SOF; and examining the impediments, challenges and benefits of acquiring foreign NDI for SOF. A case analysis was completed on the current USSOCOM acquisition of the MADS. The focus of this analysis was on key issues that had, or will have, an important impact on the acquisition of the MADS.

B. CONCLUSIONS

There are certainly many challenges and impediments to the procurement of foreign NDI. However, by following established guidelines and utilizing the FCT Program, the risks to cost, schedule and performance can be drastically reduced. Procuring foreign NDI offers the program manager a lower risk means of meeting the CINCs' urgent needs and operational requirements.

The MADS acquisition strategy, although not perfect, was sufficient to obtain and test a viable weapon system while mitigating the risks associated with cost, schedule and performance. Problems encountered during the process have been

identified and organizational and administrative changes have been made to correct these deficiencies.

USSOCOM must continue to leverage the benefits of foreign NDI procurement. With the establishment of the USSOCOM FCT office, USSOCOM has established the framework needed to ensure that a streamlined and productive process is followed by its subordinate units.

C. RECOMMENDATIONS

1. Before the acquisition process officially begins, an OIC should be designated with the responsibility for all actions and the appropriate authority to back it up.

2. USSOCOM should continue to investigate the use of foreign NDI to satisfy user requirements. They should utilize the FCT Program to procure test items and fund test and evaluation to support their acquisition requirements in concept development and procurement.

3. Army and Air Force personnel and units assigned to EUCOM should perform the extra tasks needed to operationally deploy the MADS. The Navy crewmen should only acquire the minimum skills required (static line and MFF).

4. Test requirements must be ascertained prior to determining test assets and resources required. If developmental testing is required, it is imperative that it occur prior to combined DT/OT.

5. The 24 foot RHIB should be retained to support the required number of detachments that need the MADS capability. Since funds have not been identified in the current POM, 10 meter RHIB funds (which would have been used to procure these craft) should be decremented to ensure funding for the procurement of the MADS.

6. The program manager must understand the political issues which impact on his program and devise a strategy to deal with them. Those issues that are pertinent to his program must be analyzed and their

effect continuously monitored during program concept, development and execution.

7. The Candidate Nomination Proposal system should be adopted to ensure a streamlined submission process for USSOCOM units. The personnel strength of the USSOCOM FCT office should be increased so as to better leverage the advantages of the FCT Program.

D. RECOMMENDATIONS FOR FURTHER RESEARCH

The following areas are recommended for further research:

1. Risk Management

A large NDI procurement, such as the M9 Baretta, should be selected and a risk management analysis conducted to determine the actual reduction in cost, schedule, and performance risk.

2. Cost-Benefit

An in-depth analysis of the cost of the FCT Program versus the benefits realized from actual procurements should be conducted to determine the cost-benefit ratio (i.e., FCT program has financed over 300 procurements and tests, but only 60 items were actually procured for final use).

3. World-Wide Acceptance

An analysis on how foreign countries view the FCT Program should be conducted to ascertain if there is reluctance by foreign countries and companies to utilize this program. Is there a reluctance to use this program due to an assumed bias by U.S. engineers against foreign systems? Is there a fear of technology leveling by foreign countries and corporations?

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APPENDIX. ACRONYMS

ACAT	Acquisition Category
A&T	Acquisition and Technology
ACC	Air Combat Command
AML	Aircraft Materials, Limited
BAA	Buy American Act
BOD	Board of Directors
CCC	Combat Craft Crewman
CE	Concept Exploration
CINC	Commander-in-Chief
CNP	Candidate Nomination Proposal
DCIN	Deputy Commander-in-Chief
DESA	Defense Evaluation and Support Agency
DFAR	Defense Federal Acquisition Regulation
DoD	Department of Defense
DT	Developmental Testing
EMD	Engineering, Manufacturing and Development
EUCOM	European Command
FAR	Federal Acquisition Regulation
FASA	Federal Acquisition Streamlining Act
FCT	Foreign Comparative Testing
FMTV	Family of Medium Tactical Vehicles
GAO	General Accounting Office
ILSP	Integrated Logistics Support Plan
IRPL	Integrated Requirement Priority List
JRAAWS	Joint Ranger, Anti-armor, Anti-personnel Weapon System

JT&E	Joint Test and Evaluation
LFT&E	Live Fire Test and Evaluation
MADS	Maritime Air Delivery System
MDA	Milestone Decision Authority
MFF	Military Free Fall
MFP	Major Force Program
MNS	Mission Need Statement
MOA	Memorandum of Agreement
MOD	Ministry of Defence
MOU	Memorandum of Understanding
MS	Milestone
MSE	Mobile Subscriber Equipment
NATO	North Atlantic Treaty Organization
NDI	Non-developmental Item
NPR	National Performance Review
NSWC	Naval Special Warfare Command
NSWU	Naval Special Warfare Unit
O&M	Operations and Maintenance
OIC	Officer-in-Charge
OMB	Office of Management and Budget
OSD	Office of the Secretary of Defense
OT&E	Operational Test and Evaluation
PAT	Process Action Team
PDRR	Program Definition and Risk Reduction
PEO	Program Executive Officers
PM	Program Manager

PURIB	Platform Universal Rigid Inflatable Boat
RDA	Research, Development and Acquisition
RHIB	Rigid Hull Inflatable Boat
RRB	Requirements Review Board
RSI	Rationalization/Standardization and Interoperability
SAM	System Acquisition Manager
SBU	Special Boat Unit
SOAE	Special Operations Acquisition Executive
SOCCENT	Special Operations Command, Central Command
SOCEUR	Special Operations Command, Europe
SOF	Special Operations Forces
SORDAC	Special Operations Research, Development, and Acquisition Center
SPE	Special Procurement Executive
TDP	Technical Data Package
TEMP	Test and Evaluation Management Plan
TENCAP	Tactical Exploitation of National Capabilities
TRADOC	Training and Doctrine Command.
USSOCOM	United States Special Operations Command
YPG	Yuma Proving Grounds

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